

MODERN PLASTICS

E. F. LOUgee, EDITOR
D. E. A. CHARLTON, EDITORIAL DIRECTOR

MARCH, 1936

VOLUME 13

NUMBER 7

• OF GENERAL INTEREST

Architect's home wins award	11
Giftwares that sell	14
Winners of the All-America awards	19
Plastics afloat	20
If we were giving medals	27
Laminated prevents scratching—reduces noise	34
Molded magnifier	40



PETER MÜLLER-MUNK

• TECHNICALLY INCLINED

Phenolic resins for big moldings	22
Laboratory press for research molding	28

NEXT MONTH

Peter Müller-Munk, associate professor of industrial design at Carnegie Institute of Technology, will reveal some of the work being done in this important field by students of that institution.

Industrial design has gone much further beyond the experimental stage than most people imagine and its influence is manifest wherever smart merchandise is offered for sale. It will be interesting, therefore, to learn how designers of the future are being trained at Carnegie Tech.

• NEWS AND FEATURES

Plastic modes	15
Editorial	24
Stock molds	25
Developments of the month	32
New ideas	36
Backstage	45
Keeping posted	48

Published the 5th of each month by Breskin & Charlton Publishing Corporation. Publication office, Erie Ave., F to G Sts., Philadelphia, Pa. Advertising, editorial and general offices at 425 Fourth Ave., New York, N. Y. Telephone Ashland 4-0655. Western office, 221 N. La Salle St., Room 620, Chicago, Illinois. Telephone Randolph 6336. New England office, 143 Newbury St., Boston, Mass. Telephone Commonwealth 2722.

BRIANT SANDO, Publishing Director PERRY H. BACKSTROM, Advertising Manager M. A. CLINE, Art Director DANIEL R. LEWIS, Western Manager L. P. SIEGEL, Production Manager R. G. GERMAISE, Circulation Manager ALAN S. COLE, Vice President
Subscription price \$5.00 per year in United States, its possessions, and Canada. All other countries, \$6.00 per year. Price this issue 50 cents per copy. Copyright 1936 by Breskin & Charlton Publishing Corporation. All rights reserved. Published in U. S. A. Application pending for transfer of second-class entry from the Post Office at Easton, Pa., under the Act of March 3, 1879, to the Post Office at Philadelphia, Pa.

Member of  (Controlled Circulation Audit)



Again FIBERLON
is chosen for
BEAUTY and QUALITY

Goodell Company, who have been leading makers of quality cutlery for over 60 years, selected Fiberlon for the handles of this new set. Fiberlon in correct shapes and colors, provided the finishing touch of beauty and eye appeal necessary to attract our critical buying public.



Fiberlon is available in almost limitless color ranges; in sheets, rods, tubes or cast to special shapes for economical finishing.

THE FIBERLOID CORPORATION
INDIAN ORCHARD, MASS.

New York: Lincoln Bldg.

Chicago: Daily News Bldg.

ADVERTISING PAGES REMOVED

MODERN PLASTICS

BRESKIN AND CHARLTON PUBLISHING CORP.
425 FOURTH AVENUE, NEW YORK CITY

MARCH 1936 VOLUME 13 NUMBER 7

Architect's home wins award

BY E. F. LOUGEE

The Architectural League of New York has awarded a silver medal to Mr. Sanders "for the architectural treatment of a narrow city lot" as set forth in this article, and because "his office and apartment evidence a fresh and modern use of glazed brick and glass brick and a harmonious color scheme throughout."—Editor

THE modern home completed recently by Morris B. Sanders, for his own occupancy at 219 East 49th Street was rather completely reported in the December (1934) issue of MODERN PLASTICS. At that time, however, architectural sketches were used to illustrate the interesting uses Mr. Sanders visualized for laminated plastics in the construction of his own home. Since then these plans have slowly matured. The old brownstone which had faithfully served previous generations was torn down and in its place grew one of the most charmingly modern homes yet to appear in Manhattan.

Glass brick by glass brick, floor by floor the house progressed under the super critical eyes of its designer. Original plans were followed more closely than is the custom when a client views the progress of his home. With each visit he usually discovers



1-2. Night view of the completed home and studio of Morris B. Sanders, with close-up of old red laminated door

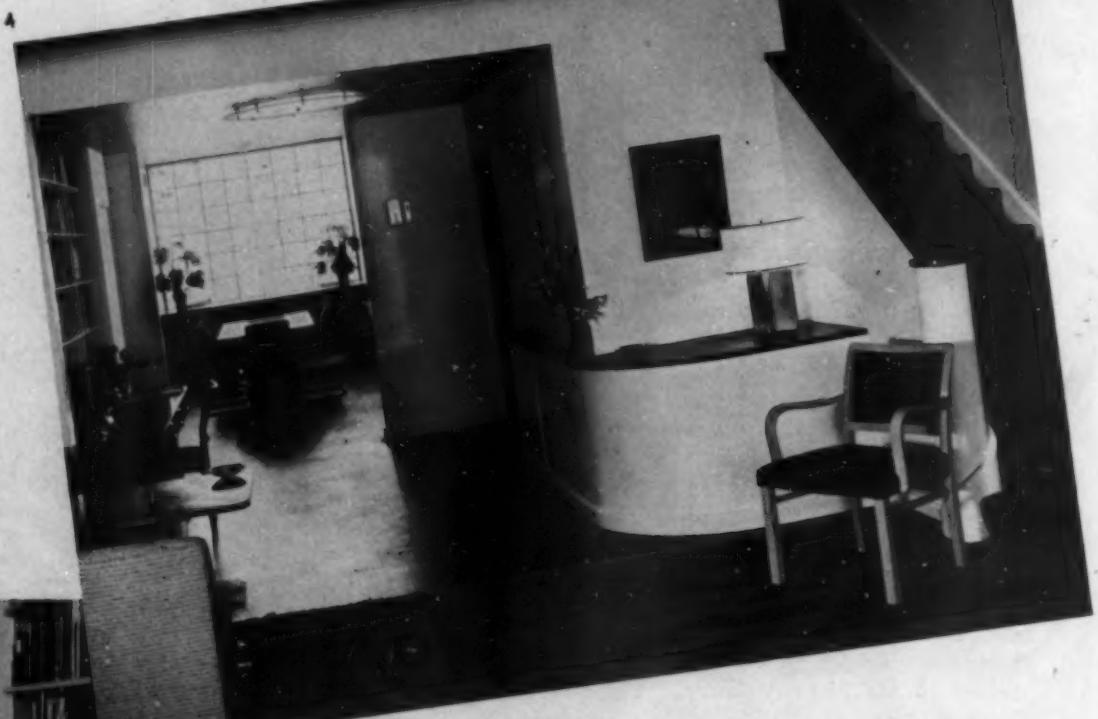
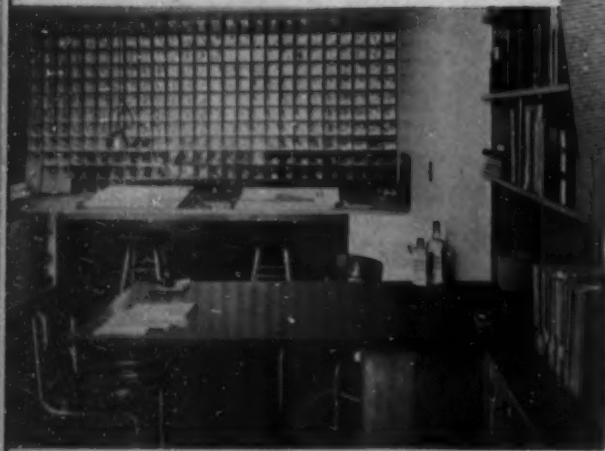


something he wants changed to the constant annoyance of architect and builder and increased and unnecessary cost to himself. Changes in this instance were confined wholly to minor improvements made possible through the last minute introduction and discovery of more modern equipment, and to slight variations of the built-in furnishings for increased convenience or more economical construction.

Now that the house is completed, it is our privilege to be among the first to present it to our readers photographically. Our interest lies naturally in the use of plastics—both contemplated and real—and in the results and experiences gained through their use.

Perhaps it should be said at the start that plastics were not used in every instance where they were originally planned because for some purposes they proved to be more expensive than other available materials which were considered equally suitable. Wherever functional advantages could be obtained through the use of plastics, however, sufficient to warrant their additional cost, no plans were changed. If you want to make comparisons between the original sketches presented previously and these illustrations of the completed house, dig out your December 1934 issue and compare away.

We will begin with the exterior as we did before and except for the different point of view the sketch



3. This private office occupies the front of the ground floor with general office and drafting room at the rear. The desk, appropriately, is laminated phenolic

4. Living and dining room of owner's duplex apartment showing laminated entrance door (in center) bulkhead, chess table and dining table in distance

5. Built-in seats and desk with black and white map mural which unobtrusively separate entrance foyer from living room without appearing to do so





6



7



8

and photograph are much alike. As you drive up to the entrance (it looks the same if you walk) you are greeted by the hospitable warmth of an old red plastic laminated door with glass and chromium peep hole set against gray stucco. The mingling greens of cedar and ivy against the blue travertine and glass brick complete an inviting ensemble.

Through this plastic door enter Mr. Sanders' guests, clients, tenants and family for he has built his workshop into his home for greater convenience. A carpeted hallway gives way at the left to an entrance to the office, studio and drafting room which occupy the entire street floor. Stairway to the two duplex apartments is at the right. Mr. Sanders' office is at the front of the building and the prominent use of laminated plastics in this room is for the top of the desk, seen in the foreground of the photograph. This installation was predicated upon the natural resistance of the material to rough usage and wear.

A central office and reception room separates this front office from the drafting room which occupies the entire rear half of the building overlooking a small garden which is yet to be completed.

The second and third floor duplex apartment is occupied by tenants, while the fourth and fifth floors are occupied by Mr. and Mrs. Sanders and the sixth by their maid.

One enters the Sanders' duplex through a black laminated door inlaid with silver metal stripes which divide it into generous squares. Metal hardware and electrical escutcheons were used throughout because none was available of plastics in suitable design. Since there is no dividing wall between living and dining room there exists a feeling of great freedom and space, yet a roll-away screen of Mr. Sanders' design provides privacy for the dining room whenever it is desired. When not in use the screen stands at one side, rolled into a decorative pillar, becoming an integral part of the decorative plan, almost unseen.

The living room space is delightfully broken by built-in seats, desk, book (Continued on page 58)

6. Book case with built-in radio beneath. Doorway at right opens on terrace through glass brick facade. Plant stand on floor is of plastics and extends full width of living room at front

7. White laminated mantle and white fireplace facade against a veneered wall of Coco

8. Built-in buffet and end of dining table both of which are mottled white laminated urea—impervious to stains and heat

9. Built-in cabinets and dressing nook in the master bedroom. The white laminated is easily cleaned and needs no frequent refinishing

10. Another view of the master bedroom showing mantle and bedside stand of white laminated urea



9



10

Giftwares that sell

BY JO CHAMBERLIN

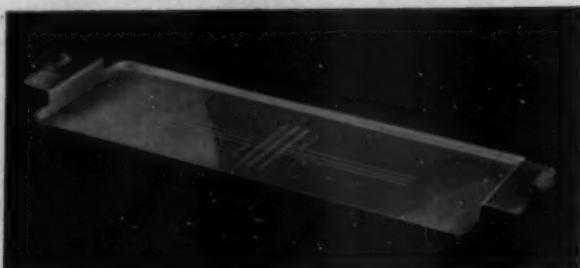
PAUL REVERE had the very good habit of doing whatever he set out to do, well. Today his skill as a silversmith has well-nigh surpassed his reputation as the chap about whom Longfellow wrote a very stirring bit of verse which has to do with a midnight ride.

As a matter of fact, silversmithing was only one of his many accomplishments. He had the first copper rolling mills in this country, cast the first church bells, engraved the first money. The company which he founded in 1801 no longer makes silverware, but the ramifications of Revere Copper & Brass are many. There are few objects used by the average citizen during the course of a day in which copper, brass and bronze do not play an interesting and rather important part.

In recent years, the Rome Manufacturing division of the company has progressed from the manufacture of kitchenware and household equipment to the production of giftware. All of these articles have a high standard of quality. The company had previously manufactured gift items on contract and so was not unfamiliar with the problems involved. Within two years a complete line has been brought out, and not a few of the new products have utilized cast resins in an interesting fashion mostly for ornamentation:

The company began using plastics for tea kettle handles, then went on to other applications. Plastic material never occupies the center of the stage. The company does not forget that it is merchandising metals. The soft and usually transparent colors of cast resins enhance the luster of the metal, and they are used only where their inherent usefulness and aesthetic appeal make their application almost mandatory in order to obtain color contrast for the metal.

The company's director of design, Leo Rich, was associated for several years with Oscar B. Bach, a designer and craftsman in metal. His is no mere work-



2

Metal giftwares often depend for a measure of their acceptance upon cast resins which give them color and warmth besides a very practical medium of decoration. These from the spring creations of Revere Copper and Brass, Inc.



3

ing knowledge of his materials. While with Bach, Rich worked on such projects as Riverside and St. John's Churches in New York City; the steamships *Manhattan* and *Washington*; the Empire State and Chrysler Buildings, and the private homes of John Sloan, James A. Farrell, and others. As director of design, Mr. Rich integrates the work of a number of independent men.

Products must be decorative, but in a subdued manner. The thing that is lacking in so many gift items, Mr. Rich feels, is the ability to wear well. The Revere line is not cheap, and includes many items for table use which must harmonize with silverware.

Cast resins are most used by Revere today. These materials have already (Continued on page 56)



PLASTIC MODES

BY EVE MAIN

BONWIT TELLER



Time for sports

Time for sports! And being on time is simple what with so many intriguing shapes and sizes in these practical "suit" watches. They have everything—they're smart, decidedly ornamental and withal so very handy and useful with colorful plastic cases and transparent backs (no broken fingernails prying the watch open to see what makes it go). Worn with eclat buttoned into the lapel and slipped into a breast pocket. If no buttonhole, all is not lost, for there's a tricky little model with short leather cord attached to a bar pin in the good old

fashioned manner that can be pinned into place. Then there's a triangular shape fitted with clip for either suit or dress; a petit octagon with twisted leather cord, tassel and arrow pin; a round watch with rope silk cord and tassel; and an oblong case with short leather cord and tassel for bag or pocket. And with the suit, perhaps a dignified "double breasted" tailored bag. The one shown is soft calfskin with hand carved plastic buttons, envelope type flap and short handle. (watches—De Frece Bernstein, Inc., bag—Arenau & Wolf, Inc.)



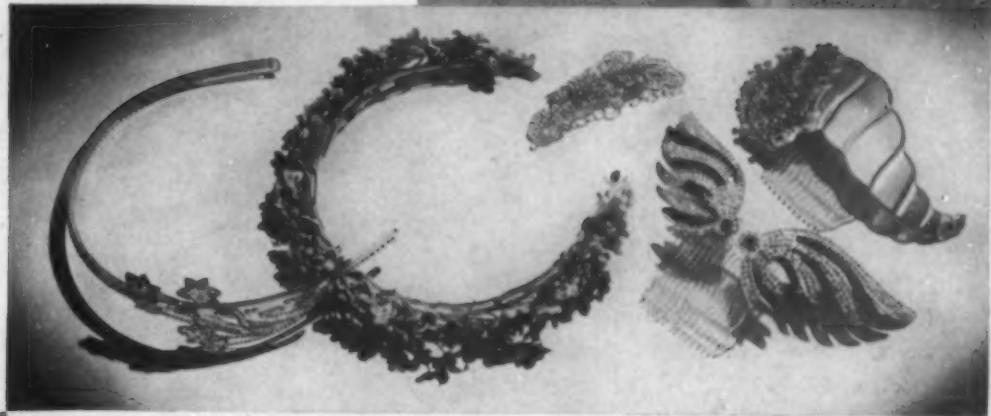
Spring overhead

It's a woman's world, millinerially speaking, and the spring horizon reveals much of interest. Lilly Daché greets the season with a collection of spring bonnets brimfull of subtle appeal. For prints and silks a big hat of white toyo (1) with colorful cluster of flowers and leaves spang in front of the wide droopy brim. Not a leaf will curl, not a petal will droop or fade for blossoms and leaves, too, are cut from thin sheets of weatherproof plastic material. A tailored red toyo (2) with ribbon band and buckle has a jaunty black quill stuck in its side. The rolled brim of a fine black straw (3) is caught and held on either side by streamline darts partially covered with a stiff red veil flaunting a saucy bow on top. A wide black mesh cocktail hat (4) becomes a flattering headdress with its generous white feather trim. Never will these feathers and quills bedraggle or wilt for they have been impregnated with a plastic substance to give them luster and life. The off-the-face dinner hat (5) with its piquant French veil was designed for Helen Chandler who now appears in *LADY PRECIOUS STREAM*. Hundreds of tiny black fabric sequins are hand sewed on net and the flower decoration from France is of impregnated material. Such delectable hats for morning, noon and evening make headline news with their sleek lines and practical plastic trim. (hats—Lilly Daché)

BETTY BURGESS



WANAMAKER



Flowers and sparkling doodads go to the head for semi-formal and formal dining and dancing. Betty Burgess, who made her screen debut in Paramount's "Coronado" chooses a wreathlike headdress of silver leaves and tiny silver balls securely fastened on a narrow plastic band. Equally chic for that partyish mood is the bandeau of gleaming rhinestones against a clear plastic ground; tiny pink and blue forget-me-nots attached to a curved plastic strip; little clip comb of rhinestones on translucent plastic; larger comb with adjustable plastic wings liberally sprinkled with black and white rhinestones; or the Horn-of-Plenty comb of pearl gray colored plastic with a profusion of multi-colored stones pouring out its wide mouth. (hair ornaments—Ben-Hur Products, Inc.)



Hold everything

The slide fastener is going places these days and in good company. It's such a handy gadget, small but doing a big job as contrasting trim on dress, hat, handbag and gloves. Louis Sanders uses a bright red plastic fastener on a smart white Breton (top) to close a diminutive crown pocket just roomy enough to store the veil when it isn't being worn. Indispensable to active sports is the culotte and this one (second from top) in natural flax twist linen has brown plastic buttons and belt buckle matching brown plastic pocket fasteners. Another red plastic fastener zips up the Shirred front of a youthful one piece frock (in circle). The outside pocket of a flat envelope style crocodile grain calfskin bag (lower left) is closed with a slide fastener in harmonizing color while the top handle pouch in the same crocodile grain has its closing fastener set in the collar top. A soft white calfskin swagger pouch (lower right) has a recessed fastener of red plastic to match the plastic closing in the center back of tailored doeskin gloves.

(Fasteners—Spectra Talon, bags—Nat Lewis, gloves—Aris, dresses—Townley Frock and Kane Weill)

Information concerning merchandise or materials featured in these pages may be obtained by writing to the Plastic Modes Editor.



Winners of All-America awards

Plastics have gained a very definite place in the field of packaging and can no longer be considered from the viewpoint of novelty alone. They are logical materials with functional advantages which frequently represent savings in eventual packaging costs. This may come about through their substantial construction which permits the use of lighter packing and shipping containers or through a better protection of the product while on display in the shops or in use at home.

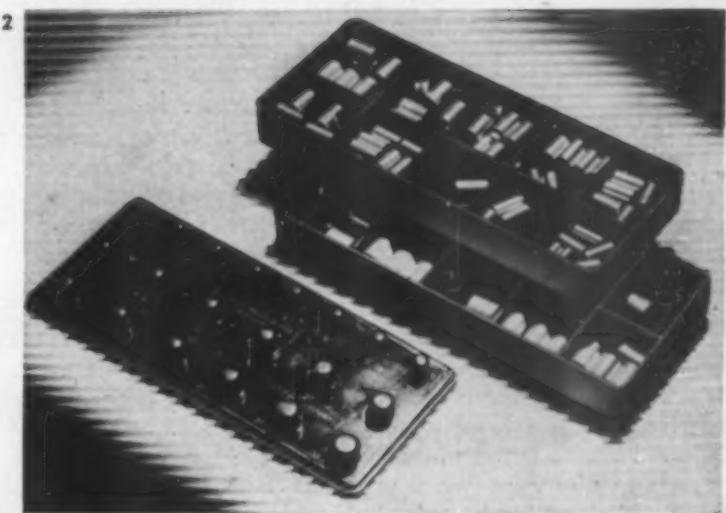
In the All-America Package Competition for 1936, sponsored by MODERN PACKAGING, plastics were given a separate listing as one of the fourteen groups of packaging materials. The judges, in making their decisions upon which awards were based, took into consideration the permanence of plastic materials which create a package that is useful over a long period of time. One that is not easily soiled or marred in use. And one that continues to hold its original appearance throughout its natural existence.

Upon these premises, a gold award was given to Cooper & Cooper, Brooklyn, N. Y. for its Razor Kit (1), designed by Elenore Groos and molded by Boonton Molding Co., Boonton, N. J.

The Cooper "shave organizer" presents a practical container for a completely assembled razor, a package of new blades and a safe depository for used blades. This package was designed from a merchandising angle—the utility value of the case under home conditions was the first consideration. Its upright design makes it distinctly practical because it will stand on the narrow ledge of the wash basin while in use and occupies but half the space of the usual razor set on the bathroom shelf. The "shave organizer" consists of a cover, center and base all molded at one time and in a three-piece mold. The base fits snugly. The cover fits with close tolerance but is easily removed. This manner of construction permits an attractive combining of color, with the base and cover in pleasing contrast with the main body of the case. The Cooper "shave organizer" found an immediate consumer acceptance, large retail and chain organizations reporting a heavy demand for it during the Christmas shopping season.

A silver award went to the J. Bird Moyer Co., Inc., Philadelphia, for its box for dental copper bands (2), designed by Charles Engelfried and molded of Bakelite by Molded Insulation Company, Philadelphia.

For years copper bands have been sold to dentists in paperboard boxes, which were partitioned. When the paper box was in use about six months, the partitions began breaking, so the various sizes were constantly being mixed. A molded plastic container, with a gauge attached, solved this and other problems for the J. Bird Moyer Company. By means of this chest or box the dentist's assistant can always keep in view a copper band of the proper size, which the doctor can pick out or off the peg. (Continued on page 54)





Plastics afloat

HALF the fun and more than half the thrill of cruising comes from navigating and handling the ship, assuming its responsibilities while under way. Navigating a small craft from one port to another and bringing it safely to anchor in a sheltered harbor each sundown exceeds the sport of kings, unless their sport is sailing ships. Who, then, wants to spend time in port shining brass? It is the lowest possible form of such sport and the less brass shining there is to do, the more enjoyable the cruise. In late years chromium plate has been used more extensively for exposed metal parts on small cruisers and chromium resists the action of salt air and water much better than brass. It is only on some of the more recent cruisers, however, that plastics have come to replace or cover metals and so far, in only too meager ways. Too meager for the complete comfort and enjoyment of boat owners who are naturally anxious to get not merely the most boat they can buy for their money, but the longest service and greatest enjoyment from their boat as well.

Mind you, we are not suggesting plastic anchors and rigging, nor do we recommend the use of plastics where the strength of metal is required, but if all door latches, escutcheon plates, compass box, control levers and knobs, lantern housings and bezels, handrails and companionways were made of and trimmed with molded or laminated plastics there would be little necessity for shining brass. Where the strength of metal is required for handrails and such, a covering of cellulose plastics in color to harmonize with the finish of the craft could be used successfully.

Where there is a crew, and something must be found for them to do while in port so they will not annoy owners, then let there be brass and chromium—and plenty of it.

The new catalog of the Richardson Boat Co., Inc., quotes specifications of cabin interiors as having doors and windows fitted with chromium plated brass hinges



Saloon looking aft on 56 foot Wheeler Playmate yacht showing access to bridge and aft cabin. Walls and ceiling of Prima Vera with walnut trim. Lamicoid will remain lustrous indefinitely.

and plastic latches. Drawer pulls in some instances are plastics, too, but why in the name of better cruising must such installations stop here! Why should the outside door latch be chromium when plastics would not only hold their color over a longer period of time but never show signs of wear as long as the boat is afloat! We have no fault to find with chromium, mind you; as long as the plating remains intact it makes a good looking latch. But sooner or later this plating wears through and the action of sea air begins. From there on there is no comparison between the desirability of chromium and plastics as sufficient material.

Perhaps there is a feeling among boat manufacturers that those who buy boats are attracted by the shining metal gadgets exposed to their view. This may be true to a certain extent with those who buy a boat for the first time, but those who have spent weary hours shining brass—hours that might have been better spent exploring some romantic seaport town, will not be fooled. They will quickly recognize the benefits of plastic hardware wherever it is used and will be influenced in its favor. This is especially true of small owner-operated cruisers which are bought and sailed

for the pleasure of sailing and navigating alone.

Of course, there is a great deal of resin (synthetic plastics in liquid form) using for exterior protection of all sorts on boats in the form of paint and varnish. It can be used as a lead primer or a clear spar that is unequalled when it comes to holding a perfect gloss in all sorts of weather.

For interior finish laminated plastics have no equal. In the first place they are light weight and may be veneered to almost any surface. They are fire resistant beyond any wood or paint finish. And their finish being unaffected by erosion of the sea air is permanent. It can't chip nor peel as does painted wood when dampness gets beneath it. And furthermore, it is resistant to alkalis and liquids which contact it in use. Alcoholic beverages hold no terrors for its surface and the blister proof grades are not subject to cigaret burns nor rings left by hot dishes carelessly placed.

Many English and American ships are being fitted

with laminated paneling in public rooms, private staterooms and baths—notably the Queen Mary to be launched this spring. Two hundred and fifty of her private baths will have plastic walls, as well as table tops and interior fittings in private and public rooms. The first installation of this sort in a private cruiser, however, appeared in the 56 foot Wheeler Playmate exhibited at the Motor Boat Show in January. This yacht is of the "sedan" type, with "streamline" deck erections, giving her a speedy profile similar to the contours employed generally in the automotive industry. Outboard she is finished in mahogany and white, with a stainless steel mast.

The yacht has a combined lounge and dining salon and three staterooms, lavatory and shower aft, and lavatory forward. There are berths for eight persons and in addition, accommodation for a crew of two men. The galley is handsomely equipped with mechanical refrigeration and a (Continued on page 59)



2



4

2. Owner's stateroom showing built-in chest, wall paneling and berth of Prima Vera and walnut. 3. Dressing table in after stateroom, starboard side, with walls and ceiling of ivory—furniture of walnut. 4. Forward double stateroom in ivory and walnut including bed and trim. 5. Galley of white laminated plastics with satin chrome copper trim. All exposed wood—finish surfaces on furniture, ceilings and walls are Lamicoid for permanence of finish and protection against fire



Phenolic resins for big moldings

BY W. H. ADAMS, JR.

In spite of the fact that the production of molded articles from phenolic resins has reached tremendous proportions in the past few years, there still remain great potential fields for the utilization of these materials. The peculiarly valuable physical, chemical and electrical properties of the phenolic resins are such that a real demand exists for them in many lines not hitherto touched. In practically all these potential fields, however, very large molded objects are required, and until fairly recently it has not been possible to produce them on a commercial scale.

While the properties of molding compounds for large articles require much study, the essential limita-

tions which have largely prevented their production have not been so much technical as economic. For phenolic resin molding the standard practice has included the use of heavy and very expensive molds, together with hydraulic press equipment. When the parts required are small, press and mold costs are not unreasonable, particularly considering the fact that the initial charge can usually be amortized over a large number of pieces. For very large objects, however, mold and press equipment involve such a tremendous outlay that they cannot even be considered, especially since the quantity is almost invariably limited. Picture, for instance, the equipment cost for

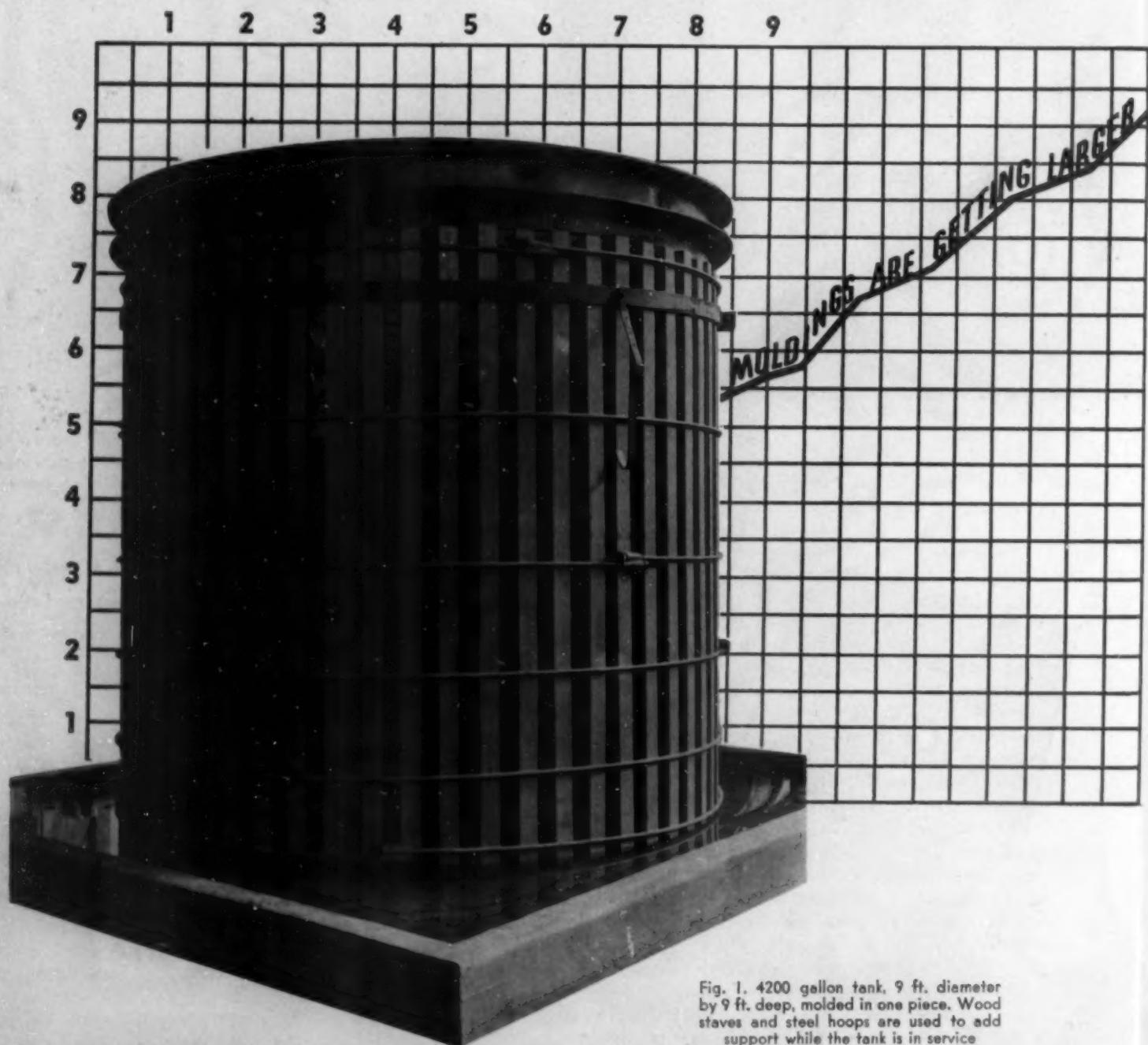


Fig. 1. 4200 gallon tank, 9 ft. diameter by 9 ft. deep, molded in one piece. Wood staves and steel hoops are used to add support while the tank is in service

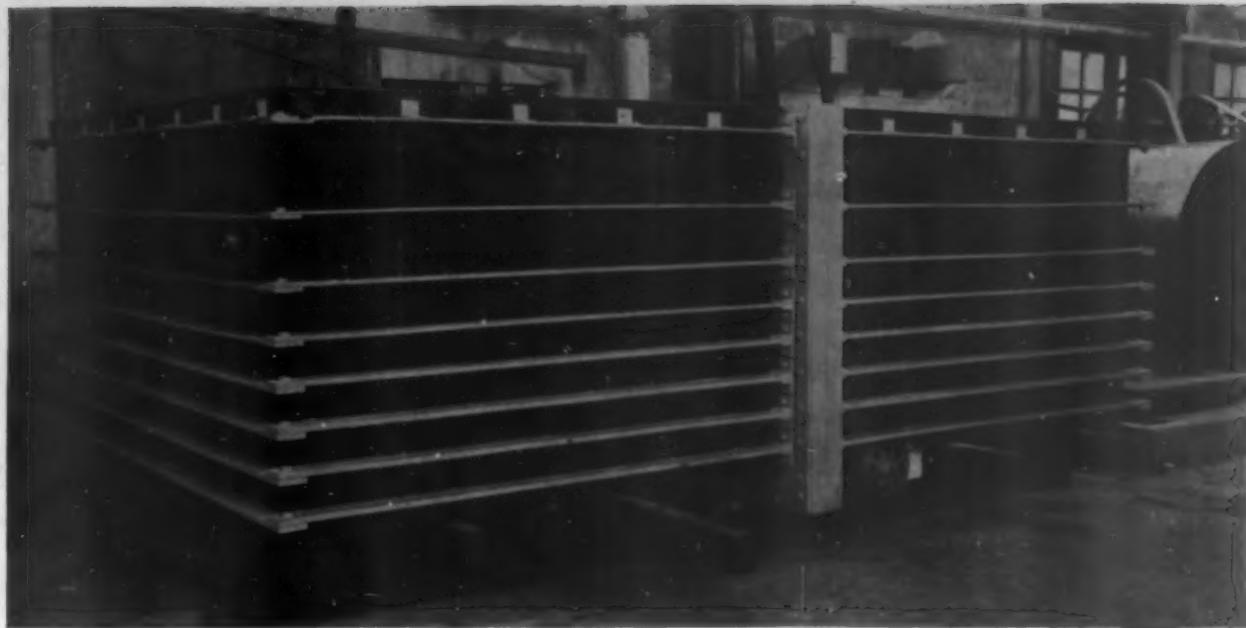


Fig. 2. Rectangular tank, 15 ft. by 10 ft. by 5 ft. deep, molded in two pieces, which were bolted securely together afterward

Fig. 3. Scrubbing towers, 36 in. by 48 in. diameter by 20 ft. tall. Two molded pieces bolted together. Fume duct is clearly seen in the foreground



Fig. 4. Pipe fittings, 1/2 in., 2 in., and 12 in. sizes. Steel split flanges are used for fastening

the production of a nine foot diameter tank weighing four thousand pounds, and then realize that the yearly demand for such tanks would certainly not run over a few score.

Because of this unfavorable cost picture on large molded pieces, many attempts have been made to utilize laminated phenolic products fabricated into finished form from smaller sheets, rods, tubes and other simple shapes. While equipment and mold charges are exceedingly small on this type of material, the cost of machining the many parts, together with the mechanical difficulties involved, have largely prevented any widespread use of such articles. Except for simple shapes, then, laminated products as well as molded products have been excluded from the field of very large objects.

Within the past few years it has become possible, however, economically to produce very large molded objects. This development began in Germany in 1922 and was introduced into the United States in 1932. It resulted in the product now generally known as Haveg. This product was brought out originally to fill the need for full size corrosion resistant factory equipment in the chemical and textile industries. The inertness of the phenolic resins to chemical attack, especially to acid attack, had been realized from the earliest days of their production; but until the Haveg process removed the size limitation, development in this field was restricted to pipe lines, towers, spinning buckets and a few other simple shapes.

This process is characterized by the elimination of the heavy cumbersome molds and equipment which previously prevented large size molding. Molds are, of course, employed; but an exceedingly light interchangeable construction is possible and practically any constructional material can be used. Thus, steel, lead, wood, and even fabric are regularly used in mold building. The costs of such molds are very small, practically negligible in most cases, so that it is no longer necessary to amortize over a large number of identical units. The writer has in mind one instance, a tank of several thousand gallons capacity which sold

for \$1700.00 of which only \$40.00 was mold charge.

The economic limitations to large molded objects having been removed, the only remaining limitations to size reside in the auxiliary equipment and shipping facilities. Auxiliary equipment is specialized and only available at the factory, so that in practice the largest size produced is limited by what the railroads can transport with current equipment.

The process is further characterized by the fact that articles can be remolded. This means that apparatus already constructed can be altered to suit changing requirements, and can be repaired if damaged by accident in construction or in handling at the plant.

Like conventional molding (*Continued on page 55*)

Editorial comment

ONE of the things we enjoy most is the exceedingly interesting correspondence that comes over this editorial desk. The constant flow of inquiries about materials and how to use them. About new projects that are under way. Ideas in their embryonic stage which are given to us in confidence in the hopes that we may be able to suggest some manner in which they may be created in plastic materials, either to produce them at a low cost so they will have a chance in this competitive market or else that they may be superior to similar objects which they are being designed to replace.

Perhaps the most interesting letters of all, are those which come to us asking about the future of plastics. Those letters from young men just out of college—some of them not yet out of high school—asking if there is any future for them in the industry. They ask if there is an opportunity for advancement if they choose to make plastics their life's work. There have been so many of these in the last few weeks that a few words about "opportunity" might not be out of place here.

OPPORTUNITY! Of course there is opportunity in a business that has grown as rapidly as has the plastics industry during the last five years. Years which were not altogether conducive to industrial growth. But opportunity is a reticent thing, retiring in nature, and not always seen except by those with sharp eyes who are on the alert. Even then sometimes it is not recognized and is passed by. Opportunity seldom flaunts itself on street corners or shouts its presence for all to hear. When you really come to think about it, opportunity is the kernel of an idea and ideas were never in greater demand than they are right now—today.

The entire plastics industry is founded upon ideas and thrives upon them. Without them it never would have been. The very discovery of our plastic materials was the result of an idea, carefully pondered upon and experimented with until it became a living thing capable of great growth. Ideas are the fuel—the food—with which it has been sustained. Without them it never would have grown.

This constant flow of sound ideas has put these materials at work in thousands of channels where they have proved their usefulness and superiority over other materials, where without ideas they would have remained unknown.

Where, then, do the greatest opportunities lie?

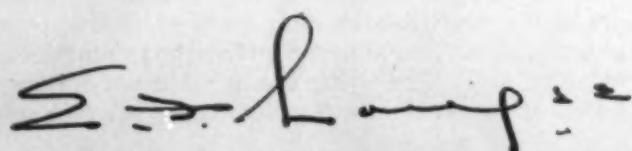
EVERYWHERE! In a field so new, where the surface has hardly been brushed, there is ample opportunity for exploration and exploitation. Thousands of plastic materials have been discovered. All of them useful in one field of application or another. Thousands of others will be discovered in their turn. Scarcely a week passes that we do not hear of a new trade-name or a new material that has been unearthed possessing unique properties not shared by other synthetic materials. Here then is a field for those with a mind for research. Opportunity in its most interesting form. Men with ideas will grasp and conquer it. They will present industry of the future with a brand new batch of materials far superior perhaps to those with which we are familiar today.

THESE new materials in themselves have little intrinsic value. Perhaps a few cents a pound. They depend upon the use that can be made of them for their expansion and growth. The very foundation of this production is ideas. Ideas based upon practical knowledge of the requirements and limitations of the materials themselves and the job at hand. Here, then, lies opportunity for those with creative minds. Those capable of interpreting the needs of a fickle public into merchandise that will sell.

The plastics industry is wide open also to industrial design. The very nature of the materials themselves and their method of fabrication make them convenient and practical to use for decorative motifs in combination with other materials. Molded and laminated plastics, for whatever purpose, require the influence of intelligent design to lift them from mediocrity and to represent them to the public for their true worth. Then here once more is opportunity for those with the eye and touch of genius—for those with *creative* ideas and the ability to translate them.

FINALLY, the motive power of all industry is sales. Merchandise on the shelves may represent a tremendous investment in dollars and cents but until this merchandise is moved from the shelves and put into circulation through sales, profits cannot be realized. Sales then, are important to all industry, and plastics, being new, require special selling technique, and a thorough knowledge and understanding of the different materials themselves. This knowledge can only be gained by study and experience.

Here are some of the opportunities in plastics as we see them. How to get at them depends upon the man. The man or woman with ideas will find a way.



Stock molds

SHEET SEVEN

HERE is a page of knobs, wheels and electrical parts obtainable in any plastic material of your specification without the initial investment of buying a mold. Molds for these parts are owned by various molders who will gladly supply samples to established firms and quote in any quantity from a few hundred up. Please mention both sheet and item numbers when inquiring.

53. Multiple extension plug housing in two parts with screw-hole for fastening together

54. Extension cord cap with fitting for brass inserts $1\frac{1}{16}$ in. diameter at bottom and $\frac{1}{2}$ in. diameter at top

55. Husk for miniature electric bulb, $\frac{1}{2}$ in. diameter at top and $\frac{7}{8}$ in. diameter at bottom. Height $1\frac{3}{8}$ inches

56. Husk, $\frac{9}{16}$ in. diameter at top, $\frac{7}{8}$ in. diameter at bottom and $1\frac{5}{16}$ in. height

57. Smaller husk, divided into 8 decorative sections. Hole at top $\frac{1}{4}$ in. long and $\frac{1}{8}$ in. wide. Hole at bottom $\frac{9}{16}$ in. 1 in. height

58, 59, 60, 61. Four electrical extension plugs, of standard sizes and different designs. Number 60 has brass fitting

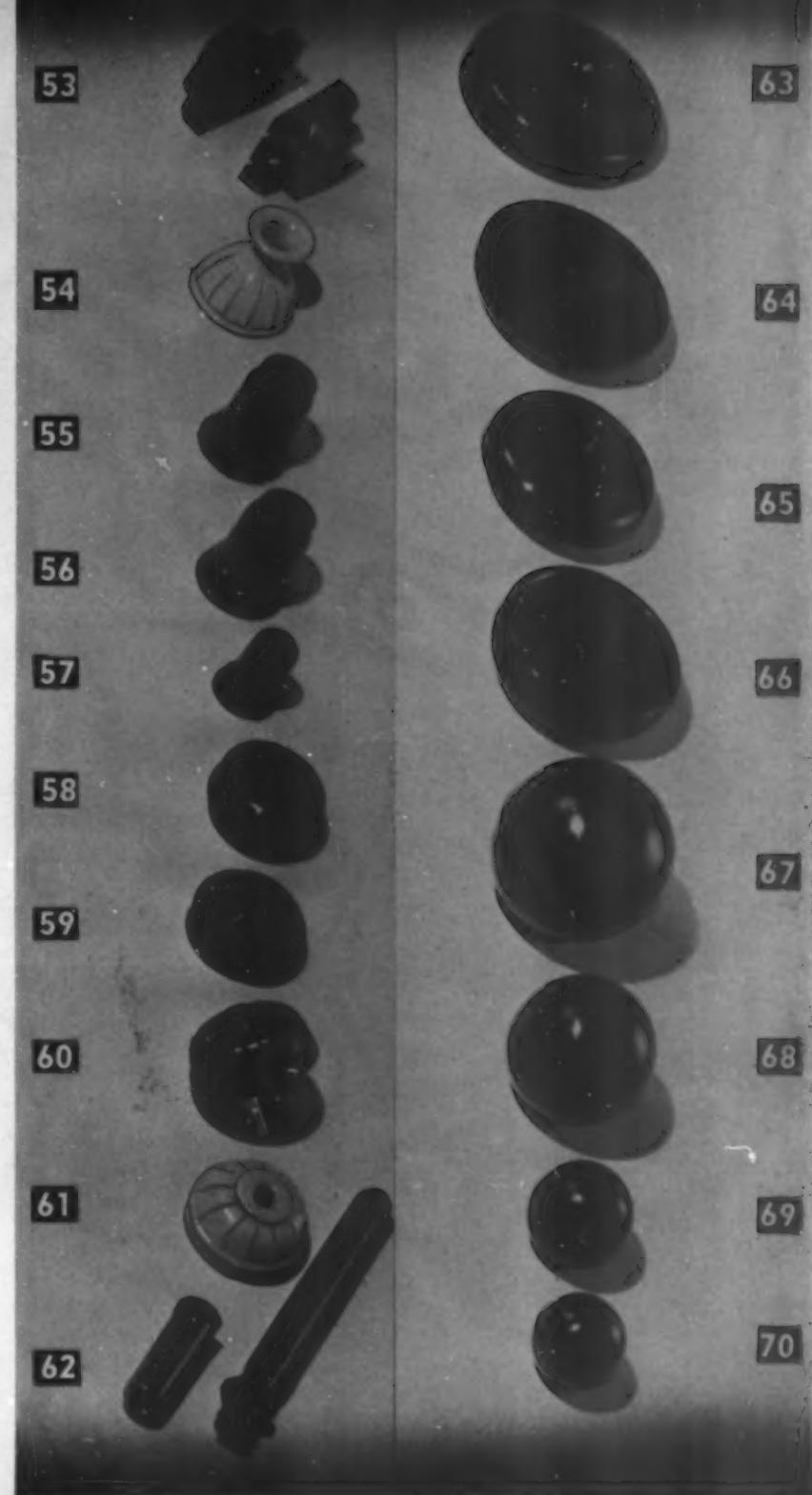
62. Molded case and cover for a clinical thermometer, $4\frac{1}{2}$ in. long

63. Valve wheel $2\frac{7}{16}$ in. diameter, knurled edge and flush stem. Opening is $\frac{7}{16}$ in. square at bottom

64. Valve wheel $2\frac{1}{4}$ in. diameter, smooth edge, protruding stem, and opening $\frac{5}{16}$ in. square on bottom

65. Smooth edge valve wheel $1\frac{7}{8}$ in. diameter, protruding stem, with $\frac{5}{16}$ in. square hole

66. Valve wheel knurled edge, 2 in. diameter. Slightly protruding stem with $\frac{7}{16}$ in. diameter opening



67. Control knob 2 in. diameter with brass insert. Threaded opening $\frac{1}{2}$ in. in diameter and $1\frac{1}{2}$ in. deep for attachment to handle

68. Control knob $1\frac{1}{2}$ in. diameter with brass insert. Threaded opening $\frac{1}{2}$ in. in diameter and 1 in. deep for attachment purposes

69. Control knob $1\frac{1}{8}$ in. diameter. Opening $\frac{5}{16}$ in. and about $\frac{1}{2}$ in. deep to accommodate brass insert

70. Control knob $1\frac{1}{8}$ in. diameter with brass insert $\frac{5}{16}$ in. diameter and $\frac{5}{8}$ in. deep for attaching to any type of control handle or shaft

Address all inquiries to Stock Mold Department, Modern Plastics, 425 Fourth Avenue, N. Y. C. All molders are invited to send samples from stock molds to appear on this page as space permits.

WORTH FILING

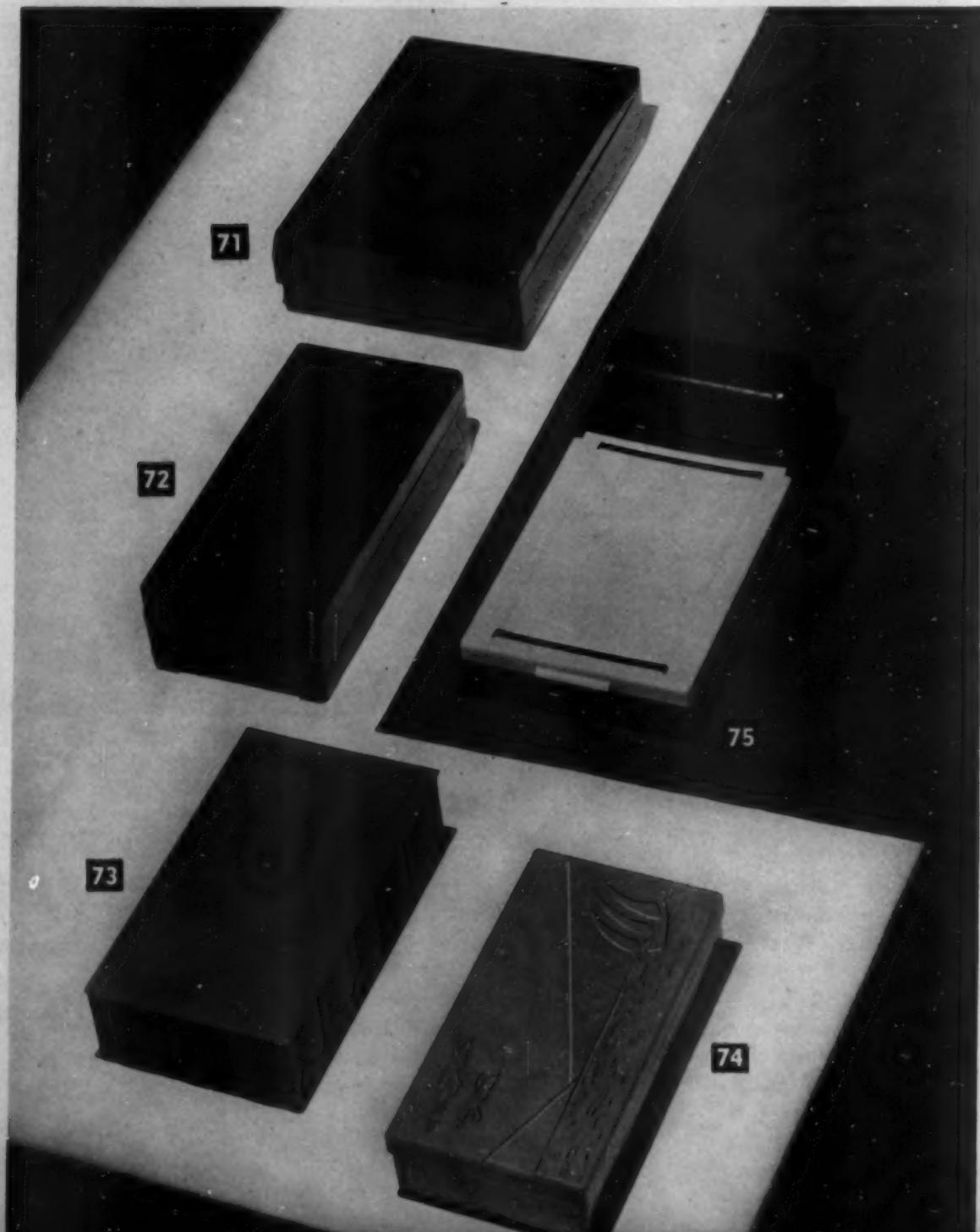
Stock molds

SHEET EIGHT

THOSE in search of durable containers with reuse value for packaging their products will welcome these attractive boxes which may be had without initial mold costs. They can be made in any color or combination of color you may require. Please mention both sheet and item numbers when writing for samples and use your business stationery.

Address all inquiries to Stock Mold Department, Modern Plastics, 425 Fourth Avenue, N. Y. C. All molders are invited to send samples from stock molds to appear on this page as space permits.

WORTH FILING



71. Flat box with outside hinge for cover leaving full inside dimensions of $6\frac{1}{4}$ in. by $4\frac{1}{2}$ in. with $1\frac{1}{4}$ in. depth. Only $1\frac{3}{16}$ in. overall height

$2\frac{7}{8}$ in. with $1\frac{3}{8}$ in. depth. $1\frac{1}{16}$ in. overall height

74. Oblong box with separate cover embossed with ship design. $5\frac{1}{16}$ in. by $2\frac{3}{4}$ in. 1 in. inside height and $1\frac{1}{16}$ in. overall

75. Famous memo pad with concealed roll of memo paper which may be torn off as used. The space beneath provides storage space for clips and rubber bands. Molded in three parts. $5\frac{1}{4}$ in. by $3\frac{3}{4}$ in. inside

HERBERT S. SPENCER



JAMES L. RODGERS, JR.

If we were giving medals . . . we'd pin one on . . .

James L. Rodgers, Jr., because as president of the Plaskon Co. Inc., he has brought this company to the front rank of material suppliers during years not altogether suited to such growth and expansion; because after obtaining his early education at the Asheville School, Asheville, N. C. and his A. B. degree at Williams College in 1917, he served as a Lieutenant, Junior grade, in the U. S. Navy until 1919; and finally because he saw a sweeter future in plastics than in the sugar plantation which he managed in Cuba before the formation of the company he now heads.

Herbert S. Spencer, because he has vagabonded through business gathering selling and merchandising knowledge and experience which he is using to advantage as advertising manager of General Plastics, Inc.; because his search for thrills and his innate curiosity have led him into (and out of) many fields of activity, not the least interesting of which was a Captaincy in the code making

and secret ink section of military intelligence; because, he has successfully sold nearly everything from newspapers to fire extinguishers; and because his philosophy expressed in his present writings is one of the bright spots of the industry.

Allan Brown, premier idea man in the plastics field, because as advertising manager and assistant treasurer of the Bakelite Corporation, he snoops around continually finding new uses of that versatile product; because in 1917 he joined the Navy as an ordinary seaman, became a Lieutenant, Junior grade, and narrowly survived a T.N.T. explosion, a hurricane, a shipwreck and the "flu"; because his experience includes the steel, publishing and chemical industries; because he likes traveling, music, fishing and golf; and lastly, because he is unselfish with his very sound and practical ideas—sharing them with anyone who will listen.

Laboratory press for research molding

BY AL HAYWARD

RESEARCH and development work is of major importance in almost any phase of industry. Chemists and physicists are continually striving to forge ahead with new developments in methods, materials and products and their success or failure is based largely upon how well they anticipate the desires of the public. Though not emphasized particularly, plastics play a greater part in such activity than is commonly supposed. Sizable quantities are absorbed every year for such purposes, but because they are sometimes used only in the laboratory and do not always appear in a finished product, their helpfulness is not always given sufficient recognition.

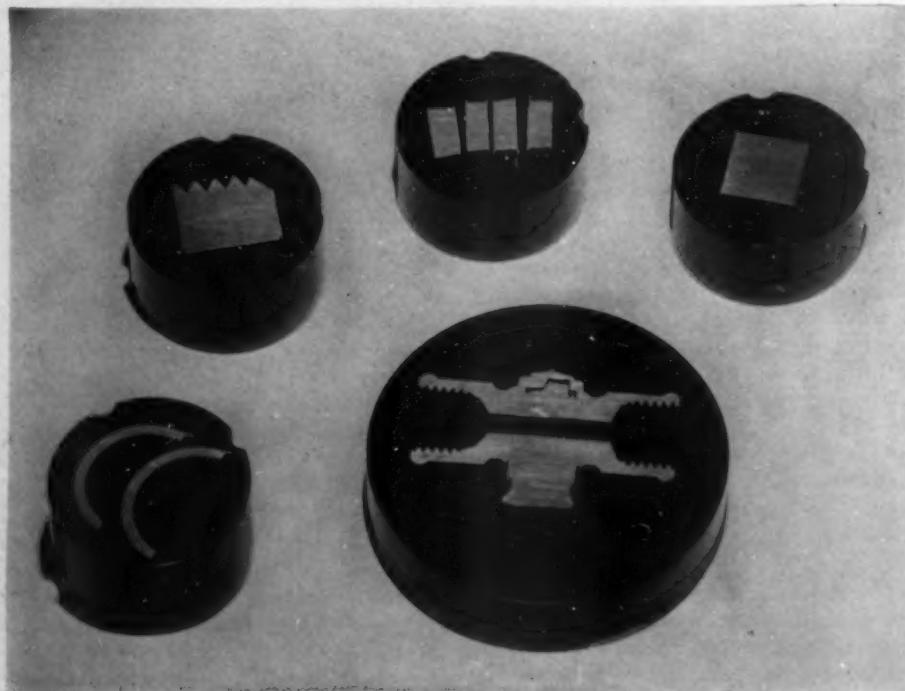
For instance, molded phenolics are used extensively in laboratories for metallographic study. The Brooklyn Edison Co. handles innumerable types of special investigations and the materials for microscopic examination range from brass condenser tubes and lead cable sheathing to alloy steels for high temperature service. It is often necessary to examine specimens at the edges or in the vicinity of fractures which means that the work is much more complicated than it would be in handling large numbers of specimens of uniform type. Because many of the specimens are of odd shapes, difficult to hold during grinding and polishing operations, it became imperative to devise some convenient method of mounting. Familiarity with phenolic molding compounds for electrical insulation suggested that it might be ideal material to use, since it can be obtained in several degrees of hardness and is resistant to the various etching reagents. Furthermore, it will hold any type of metal firmly. Therefore simple molds were constructed for use in a small laboratory press to mount specimens for examination, in appropriate thicknesses of the plastic material.

The Brooklyn Edison Co. found this method of mounting to be eminently satisfactory. Besides permitting the mounting of odd shaped specimens in convenient form for grinding, it provides adequate support to the edges which may be polished without rounding the corners. This method is also of value in mounting sections of condenser tubes and the like where it is essential that they should not be deformed in the polishing process. When these specimens are placed on

the microscopic stage, the smooth surface of the plastic material allows them to be moved about without danger of scratching expensive lenses or disturbing the focus. The action of etching solutions offers no difficulties even when it is necessary to repolish and etch several times. This development of plastic mountings made it possible to use an automatic polishing machine for greater uniformity and for the elimination of some of the operations of hand polishing, which were formerly unsuitable.

Plastic mountings are used in a similar manner by many widely divergent concerns. The Naval Aircraft factory in Philadelphia spends a great deal of time and effort in checking and approving metal parts to be incorporated into delicate instruments and strategic points in aeronautic construction. Bits of metal must be studied carefully to ascertain whether or not their structure and characteristics meet with the rigid requirements necessary. Because it would be difficult to handle the various shapes by themselves with any degree of accuracy, they are mounted in a plastic molding by a small laboratory press and highly polished. Then it becomes a simple matter to examine them closely under a microscope.

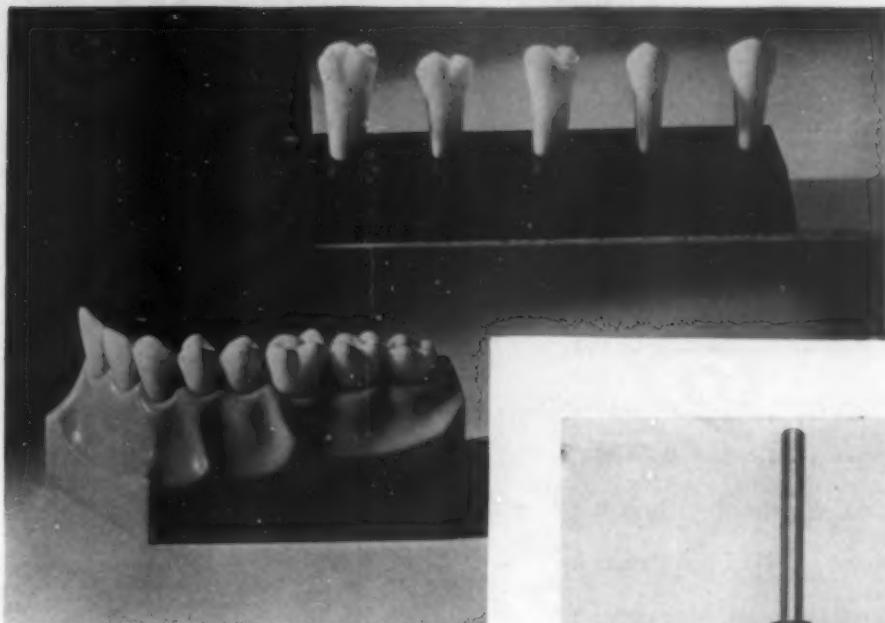
John A. Roebling's Sons, in New Jersey, wire manufacturers and contractors for the Brooklyn and George Washington bridges among others, select small portions of wire and cables to be used in suspension



Metal segments molded into phenolic blocks on a laboratory press where they are firmly held for acid or abrasive tests and microscopic examination



Permanent denture of Vidon as developed on a laboratory press by Lee S. Smith & Son Manufacturing Co.



Removable "technique" teeth for practice and demonstration molded on a laboratory press and attached to the denture plate by screws underneath

Demonstration teeth mounted on black plastic base with concealed screws. Both examples from the Columbia Dental & X-Ray Corp.

At the right is an electric laboratory press only 36 in. high yet capable of molding any plastic object up to 3½ in. diameter

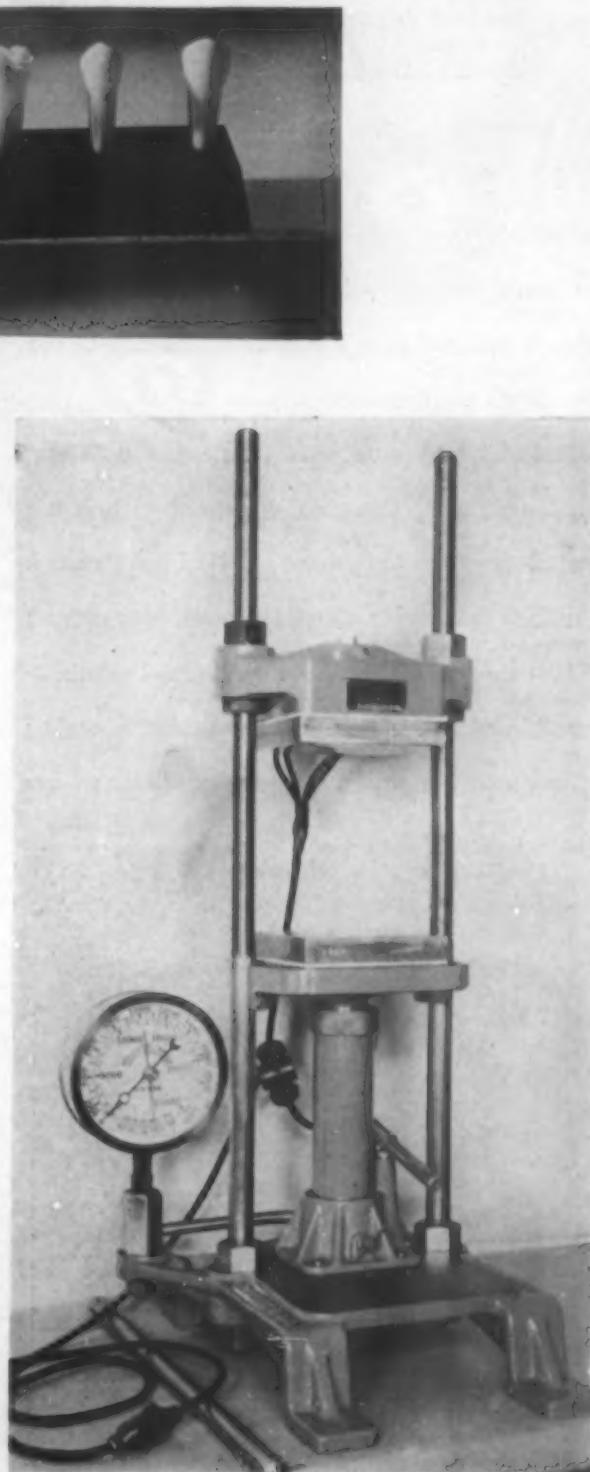
projects and mold them into solid blocks of plastic materials. Here they are polished and subjected to microscopic study to determine their suitability for the purpose for which they are intended.

The Ford Motor Company finds this laboratory method of mounting specimens for microscopic study of great assistance in examining pieces of metal to be used in the production of automobiles and for checking deficiencies of structure and weaknesses which they discover occasionally in handling different manufactured parts.

Sometimes in the course of experiment and research projects, chemists stumble upon the formula for an entirely new material. For example, Dr. A. M. Howald conducted a series of experiments in an effort to perfect a material for use by the Toledo Scale Co. in manufacturing its products. His investigations culminated in the discovery of a new plastic material,

which was named "Plaskon." The Toledo Scale Co. found it perfectly suited to their own work and eventually formed a subsidiary corporation, Toledo Synthetic Products, Inc. (now Plaskon Co., Inc.), through which it was introduced to trade in general.

For years Lee S. Smith & Son Mfg. Co., manufacturer of dental products, has been doing research work on adapting vinyl resins to the field of prosthetic dentistry using them as substitutes for the ordinary vulcanite base in making (Continued on page 62)



THE WAKEFIELD LIGHT

The Better Light Better Sight Bureau and the Better Vision Institute are doing fine work in teaching all of us to protect and improve our eyesight. Meanwhile, the lighting industry has turned to Molded Color for efficient lighting. The Plaskon reflector on the new Wakefield "Commodore," for example, provides over 83 per cent of the output of the bare bulb—without glare. This 19-inch reflector is molded in a few minutes in one of the largest molds in plastic history.

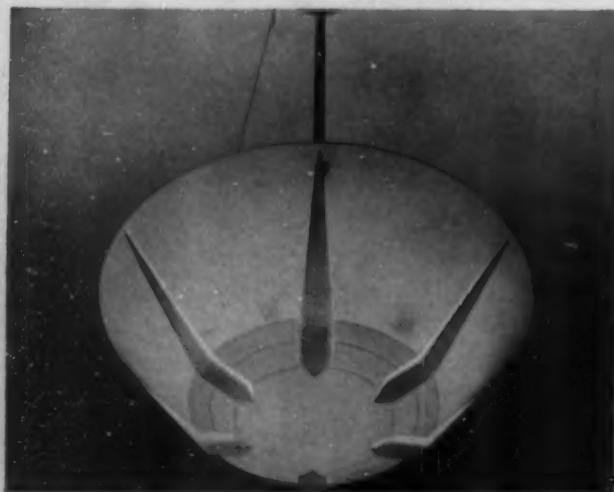
Complete with aluminum pendant, the "Commodore" weighs $3\frac{1}{2}$ pounds, or less than half the weight of comparable metal and glass fixtures. The Plaskon reflector is shock-resistant, thus cutting down loss due to breakage of glass, and eliminating possible hazard to human beings. Soft, pleasing colors are possible, and decorative possibilities are

greater than with glass, both structurally and in color. The light weight saves shipping costs, and permits salesmen to carry portable kits for effective, on-the-spot demonstration.

Such kits weigh only 14 pounds, and contain a telescopic extension rod which will permit the new "Commodore" unit to be held firmly against the ceiling of any store or office. The lighting improvement to be expected from a permanent in-



CLOSE UP OF "COMMODORE"



stallation can be shown with light meter readings.

Plaskon is colorful, strong, and impervious to nearly all chemicals. It is easily molded into any shape at moderate cost. Van Doren and Rideout designed the new fixture for The Wakefield Brass Company, Vermilion, Ohio. The Plastics Department of the General Electric Company molded the bowl.

COSMETIC CONTAINERS

The new cosmetic containers manufactured by the Plastics Division of Colt's Patent Fire Arms answer many a packaging executive's prayer. These containers have three parts. The outer bowl, which holds and protects the inner bowl and forms an air-insulating chamber, is molded of Plaskon. The inner bowl is molded of Coltrack Supreme, which has passed every test on the requirements for



the packaging of cosmetics and pharmaceuticals containing fruit juices, water, animal fats, mineral and vegetable oils, glycerin and the like. No cement or adhesive is used in the assembly. The covers, also of Plaskon, have a machine screw thread, insuring maximum closure. These feather-weight containers are 70 per cent lighter in weight than the same size opal glass jars. They come in a broad range of sizes, colors and color combinations.

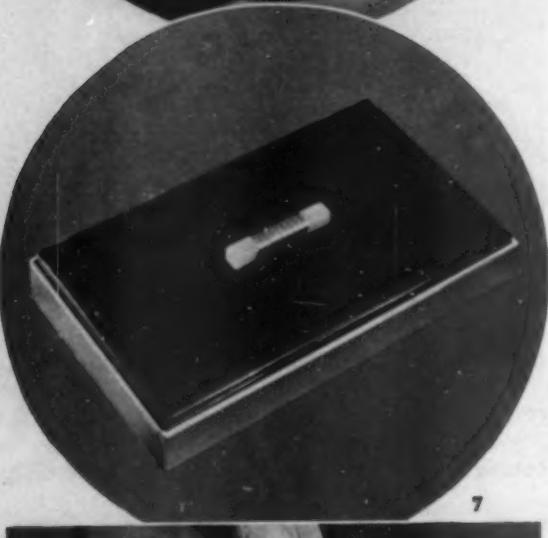
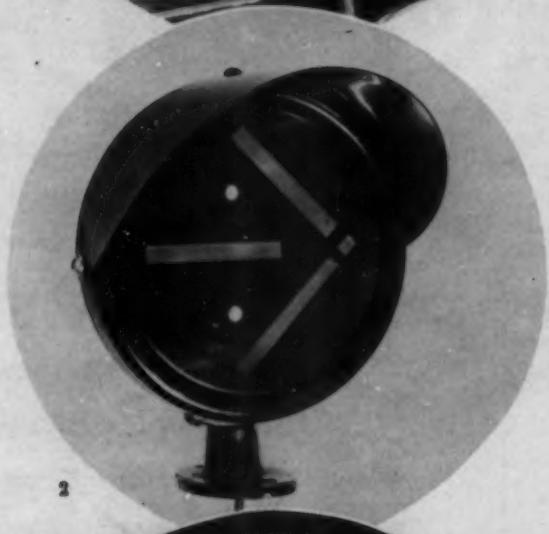
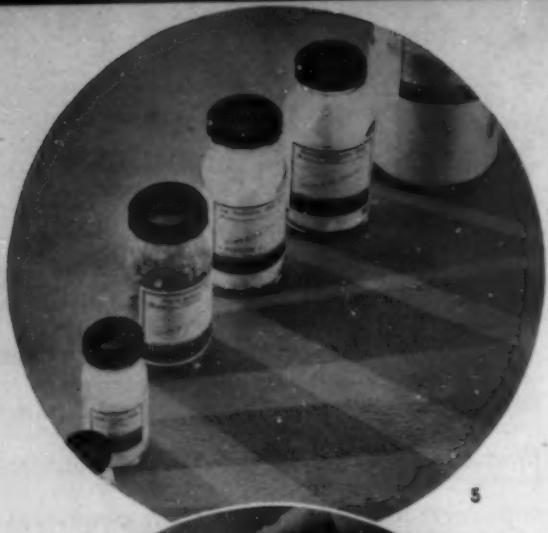
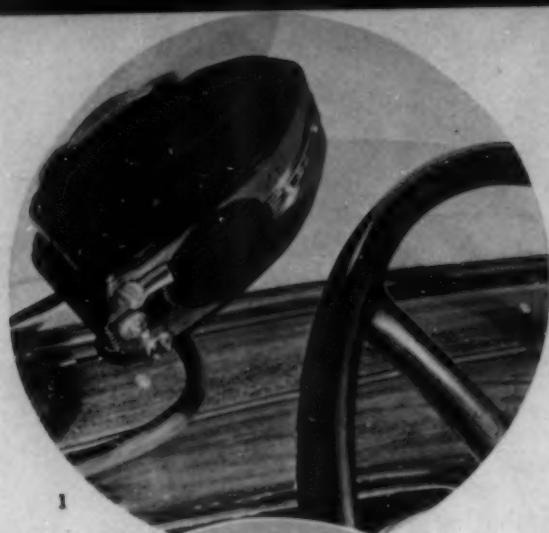


TUSSY LIPSTICK HOLDERS

Any merchant knows that women buy a product for its beauty, utility and quality . . . in that order of importance. The new Tussy lipstick offers all three qualities—in Molded Color. The lipstick container is molded and threaded in Plaskon at a single operation, in this instance by the Mack Molding Company of Wayne, New Jersey. There are over 7,000 Plaskon colors to choose from so it was not difficult to pick four—red, green, ivory, and orchid—which contrast pleasingly with each other and with their contents. These Tussy lipstick containers will be as colorful and flawless a year from now as they are today, because Plaskon colors are light and age proof. Why not give your own product the benefit of Plaskon's eye-appeal?

Please address all inquiries to Plaskon Company, Inc., 2121 Sylvan Avenue, Toledo, Ohio.

MACK MOLDING COMPANY



*developments
of the
month*

1. A windshield defroster made by Bishop & Babcock Mfg. Co. is molded by Reynolds Spring Co. Working on a vacuum fan principle with an auxiliary electric unit for sleet, the device, as well as rotor, fan and bearing case cover are molded of Durez for durability and light weight
2. A directional signal used mostly on trucks has an oval frame of Pyralin. The part cut out in the form of an arrow with a light behind it indicates the direction in which the truck is going to turn
3. The "Stop" signs of the Chicago Motor Club are finished with yellow enamel based on Bakelite resin. The primer used under the enamel also contains these resins providing additional fortification against the ravages of the elements
4. Flower arrangements in shallow wide-brimmed bowls are made easy with an anchor holder by the Specialty Guild Inc. of Bakelite resinoid. A suction disc provides a firm stanchion for large bouquets while the various sized holes are for large and small stemmed flowers
5. The J. T. Baker Chemical Co. has repackaged its entire line of analyzed reagents, adapting non-corrosive black Bakelite molded closures sealed with a viscose tamper-proof seal unaffected by chemical salts. Easy to open, the closures are molded by Armstrong Cork Products Co.
6. An ingenious dispenser developed and molded by the Ackerman Rubber and Plastic Molding Co. is designed primarily for sanitary use in barber shops. A simple twist of the wrist dispenses enough cream for one shave and does away with the dipping of fingers into the jar. Molded of Durez
7. The Dennison Mfg. Co. presents a box of stationery items attractively packaged. The box has a gold ribbed paper border and a brown paper cover. The orange Catalin ornament slipped through a metal band gives it a substantial and gay appearance
8. Here is a handsome black and chrome brush by Metalfield Inc. that is a treasure box for the man

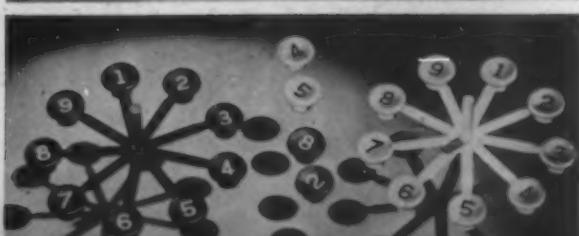
10



11



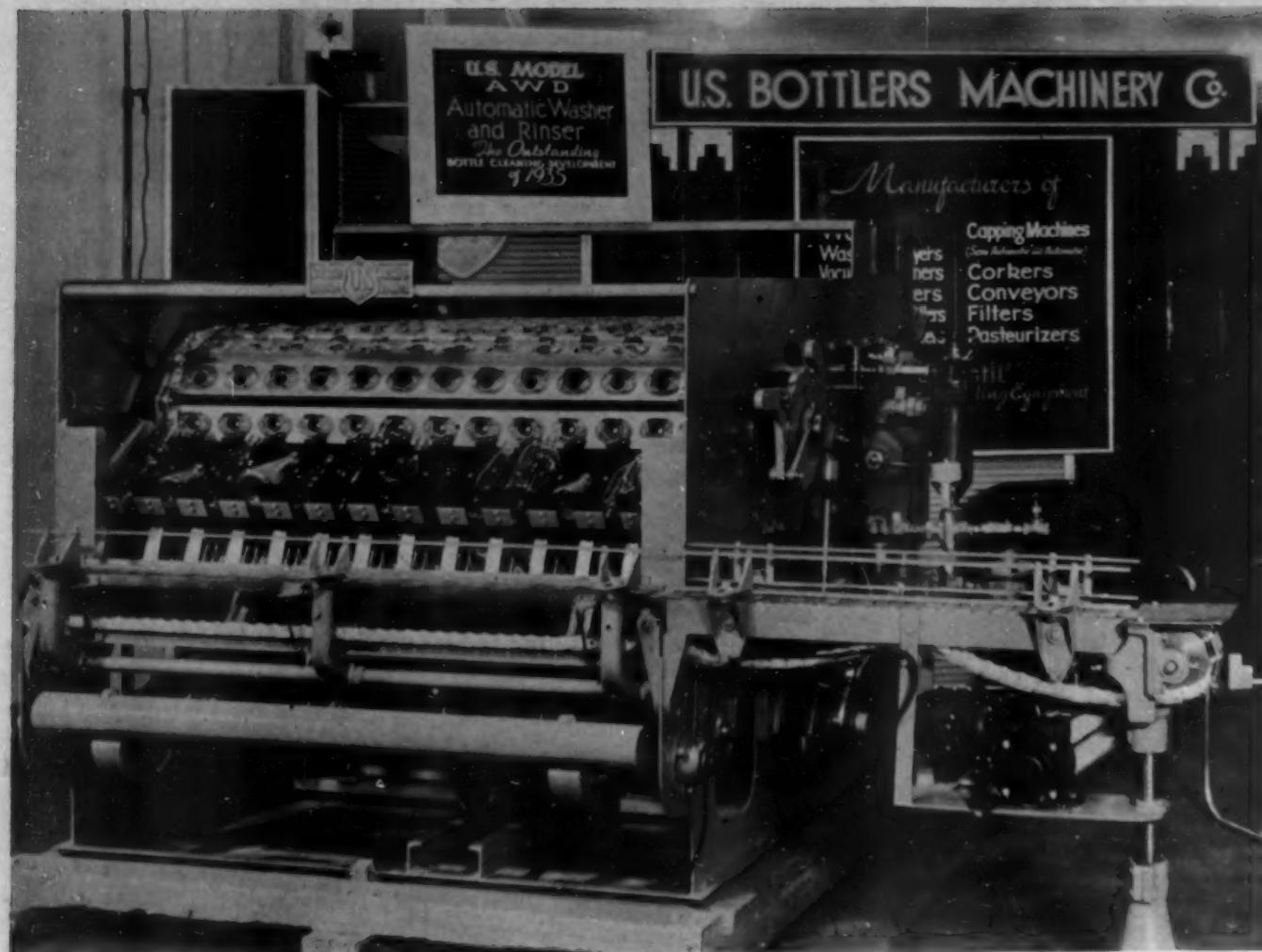
12



who travels, camps or weekends. Hidden in the top of the brush on a plastic tray is a complete shaving and hairdressing kit

9. A cocktail and general utility tray is offered by Silex Coffee Makers. Molded of black and scarlet Durez by the Northern Industrial Chemical Co., the trays are light, scuff-proof and not stained by food acids or alcoholic beverages
10. A new Durez dispenser mug for barber shop use is molded by Chicago Molded Products Corp. for F. W. Fitch Co. The mug has a refillable compartment for the shaving cream which is dispensed through a hole in the bottom
11. A molded Durez scale plate is used on the Ohcus laboratory scale made by the Newark Scale Works Inc. Plastics were chosen because of their resistance to the variety of products coming in contact with the scale plates from chemicals to highly volatile solvents
12. No—this is not a spider web—but two sets of Tenite adding machine keys molded by automatic injection process by Erie Resistor Corp. A set of nine keys is molded in one unit at the rate of five injections per minute





Laminated prevents scratching—reduces noise

THE new model AWD automatic washer and rinser announced by the U. S. Bottlers Machinery Co. has adopted a remarkable new application of laminated plastics. They have used the material for the receiving and discharging carriages along which the bottles slide on their way to be washed and rinsed and at the other end to be filled.

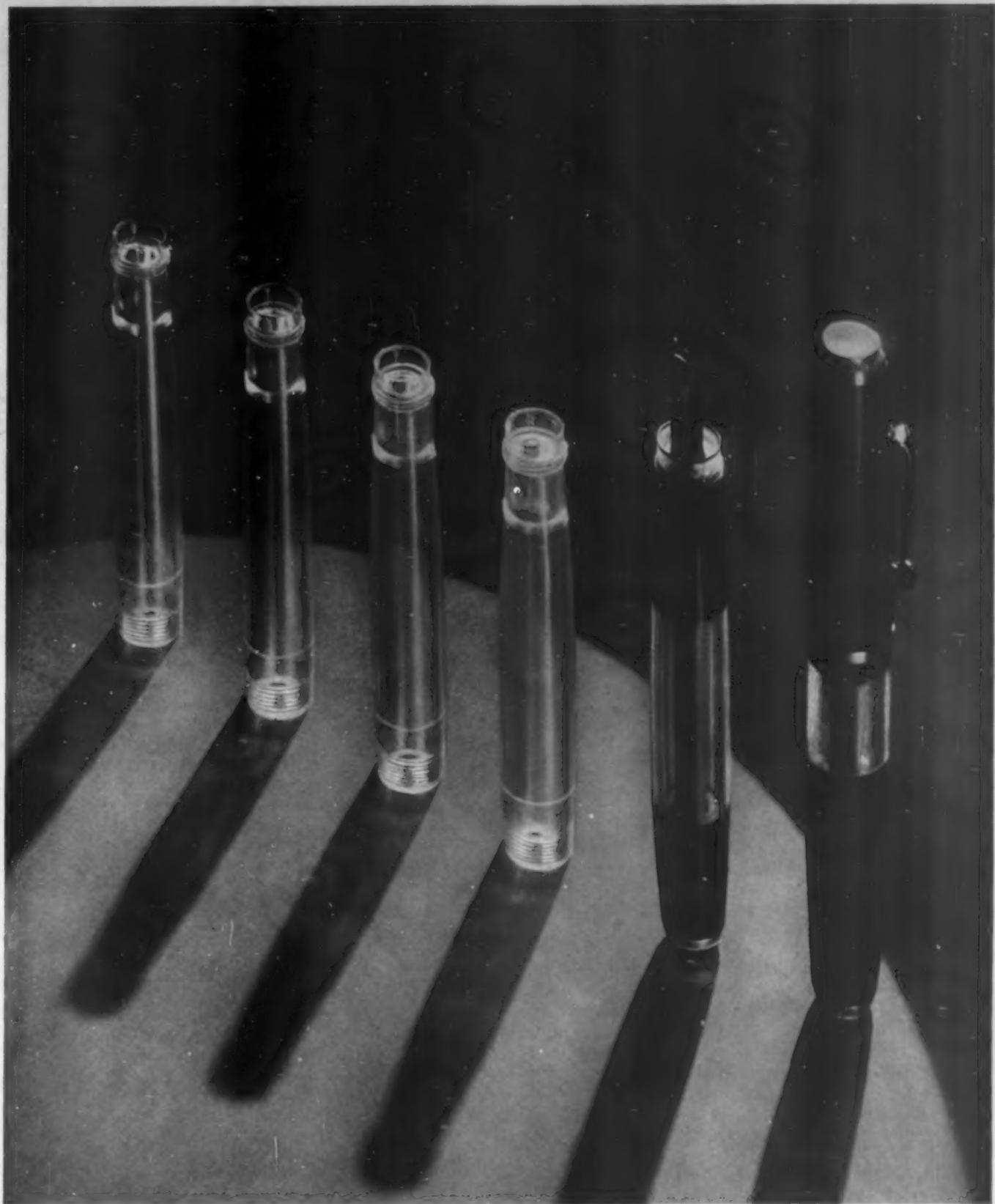
Laminated was used in place of the usual metal slabs for several interesting reasons. In the first place, bottles going through this machine naturally carry much scum and dirt which is ordinarily transferred to and held by the recesses in the metal piece. This is not true in the case of the plastic sheet which is easily cleaned with a wet rag. Secondly, the usual clatter of tin and glass against metal is entirely eliminated and the objectionable noise of washing machines is overcome. On the usual metal faces, too, the bottles are easily scratched and otherwise marred for the metal will only retain its surface finish for a certain length of time after which the bottles become damaged. Again plastics have eliminated this difficulty.

This machine which has an operating capacity of

from 60 to 180 containers per minute is particularly adapted for large production requirements. While it washes and drains containers in an inverted position, it will deliver them right side up onto a container conveyor or feed conveyor of the filler machine as desired. It can be readily synchronized by means of the variable speed control furnished as standard equipment on all models. It can be furnished with three types of feed: slide feed for hand loading of containers; unscrambler feed, for handling round containers by the case, making it possible for a single operator to handle as high as 180 containers per minute; roll feed, for handling round tin containers from the floor above, which are fed by gravity direct to the washer, eliminating the need of an operator at the machine to constantly tend and feed it.

When loading the machine containers are placed in the feed chute. As an empty flight registers in position to receive a row of containers, they automatically feed from the chute into the cups. The containers are then carried in an inverted position through the washer.

Containers are thoroughly (Continued on page 57)



TENITE

in clear, amber, and red transparent colors is used in these Sager Vacuum Pen barrels, to provide a visible ink supply and to insure the pens against breakage. For many other uses requiring transparency and high shock resistance, product designers find Tenite the ideal plastic. Write today for a new 52-page illustrated book on Tenite.

TENNESSEE EASTMAN CORPORATION (Subsidiary of Eastman Kodak Co.), KINGSPORT, TENN.

Sager Vacuum Pen barrels molded of
TENITE by Keelyn Plastics Company

NEW IDEAS

● To prevent damage to doll heads from gases liberated during the molding operation, a separable mold is used which has two fitted halves. By alternately applying pressure to both halves so that they are held tightly together, and releasing the pressure to permit escape of evolved gas, hot molding is successfully accomplished without permitting the gas to cause any defects in the finished doll heads. During the periods of released pressure the separable halves of the mold are not moved apart. The eye and mouth openings are formed by corresponding projections on a core of low-melting metal alloy carried on a tapered arbor which enters the doll head at the neck. (Leo J. Grubman, Margon Corp., New York City; U. S. Patents 2,027,164 and 2,027,165.)

● Molding powders which yield shaped articles having very high gloss, great hardness and excellent resistance to cold or boiling water are made from urea-formaldehyde in two stages. First a mixture of urea and thiourea is condensed with a mixture of formaldehyde and hexamethylene-tetramine, but the reaction is not carried so far as to yield a hardenable resin. The product is stable in storage for indefinite periods and so is not subject to losses arising from delay in using the material. When ready for the molding operation, the non-hardenable resin is subjected to a further treatment with formaldehyde to form a hardenable resin, which yields the desired molding powder; cellulosic or other fillers may be compounded with the resin. (Societe pour l'Industrie Chimique a Bale, Basel, Switzerland, French Patent 790,230.)

● A shortage of tin for tubing in Germany has led to the development of glass tubing with molded plastic unions for conveying sensitive liquids, especially for piping beer. Each length of glass tubing is flanged at both ends for attachment of the molded union, and expansion or contraction is allowed for by using a relatively elastic synthetic resin in the molding composition. The beer or other liquid is not allowed to come in contact with the unions; a fat-extracted rubber ring is inserted in each so that the liquid touches only glass and rubber as it passes through the pipe line. It is predicted that the idea will make headway on its own merits even where the price of tin is not excessively high. (Kunststoffe, February, p. 39.)

● For combining buoyancy and strength in the boat bodies of hydroplanes, a structure of hollow tubes is built by spirally winding wood veneer to form tubes which are then placed in layers with the tubes in each layer laid perpendicular to the direction of the tubes in the preceding layer. The layers of tubes are bonded together and embedded in a cellulose derivative plastic material, which is dissolved in acetone and used to surround and embed the cellular body formed by the tube layers. (Harry N. Atwood, South Lyndeboro, N. H., U. S. Patents 2,029,047, 2,029,048 and 2,029,049.)

● Surprising effects have been obtained in polyvinyl acetate plastics by homogenizing the vinyl resin thoroughly with finely powdered cellulose. Unlike those products in which a fibrous material is impregnated with a synthetic resin, the new products contain only a relatively small proportion of cellulose and a predominating proportion of polyvinyl acetate. The effect may be likened to the reinforcing effect of certain pigments in rubber. When the proportion of cellulose is quite small, excellent plastics for injection molding are obtained; with somewhat more cellulose the compositions are exceptionally well adapted for making such articles as phonograph records. (Chemische Forschungsgesellschaft m. b. H., Munich, Germany, German Patent 621,747.)

● Microphone diaphragms, molded electrical insulation, playing faces of sound records, and other shaped articles in which porosity is objectionable, can be successfully made from synthetic resins by adding a plasticizer which makes the products non-porous. Thus water absorption, with its attendant evils such as lowering the resistance of electrical insulation, is eliminated. Tricresyl phosphate is a very good plasticizer for the purpose. (Steatit-Magnesia A.-G., French Patent 792,381.)

● The use of diamond dust as an abrasive for grinding or polishing extremely hard surfaces is greatly facilitated by a new method in which the diamond dust is blended with a mild abrasive such as rouge (ferric oxide) and made up in the desired shape with a synthetic resin binder. (Diamantschleifer Voegeli & Wirz Akt.-Ges., Biel, Switzerland, Swedish Patent 83,462; P. Voegeli-Jaggi, inventor.)

● Permanent magnets can now be made in shapes not hitherto considered feasible, by reason of a development which followed the introduction of the new magnetic alloys such as iron-cobalt-molybdenum or, better still, nickel-iron-aluminum alloys. By powdering the magnetic alloy and adding sufficient synthetic resin to serve as a binder, magnets can be made up in any desired shape such as flat or dished plates, rings and the like. Although economy in manufacture was the principal motive for making magnets by the new methods, the advantage of ready shaping has become more important. (Kunststoffe, February, p. 39.)

● Glyptal resin tubing, as made by the extrusion method, has superior properties if made from a blend of two different types of glyptal resin of which one type is employed in a prehardened state. In particular, the blended resin is free from gas bubbles and exceptionally immune to cracking after the tubing operation. It is also highly suitable for making rods and sheets, and has excellent electrical properties for use in insulation. (Allgemeine Elektricitäts-Gesellschaft, Berlin, Germany, German Patent 618,343.)

● Box toes for shoes are advantageously made from blanks in which two types of cellulose ester are used, one in precipitated form and the other in a firmer, harder, more colloided form which is much more resistant to the action of cellulose ester solvents. The two forms of cellulose ester may be intermingled and applied uniformly throughout the supporting fabric which forms the blank, or the precipitated ester may be applied to one side and the harder, more colloided ester to the other side of the blank. In either case the box toe is made from the blank by applying a solvent which softens the blank just sufficiently for molding; the softened blank is then shaped and dried. (Earle H. Cameron, U. S. Patent 2,027,957; Jos. Fausse, U. S. Patent 2,027,967; Russell Hamilton, U. S. Patent 2,027,973, all assigned to Celastic Corp., Wilmington, Del.)

● Metal pipe which is to be used under severe conditions, e. g. with corrosive liquids, can be effectively protected with an inner core of vinyl resin, which is formed to shape within the pipe in two shaping operations. First the vinyl resin composition is made up into a hollow preform; the preform is then placed within the pipe (which acts as a matrix) and given its final conforming shape by means of heat and fluid pressure. Finally the vinyl resin composition is rendered thermally stable by a heat treatment which is supplemental to the shaping operations. (Lauchlin M. Currie, National Carbon Co., Cleveland, O., U. S. Patent 2,027,961 and 2,027,962.)

CATALIN

fabrictors

CATALIN can be cut as readily as brass or wood

CATALIN for parts of irregular contour are shaped on a standard turning lathe

IVORYCRAFT COMPANY, INC.

40-17 22nd Street L. I. C., N. Y.

Fabricators to the trade of all type handles, cutlery and utensil handles, also knobs and turning jobs featuring large quantity production. Specializing in CATALIN dice and game accessories.

•

PLASTIC TURNING COMPANY

Leominster, Massachusetts

Quality CATALIN products. Featuring items such as jewelry, novelties, cigarette cases, clock housings, toilet articles, handles of various description, silverware and similar items.

•

H. KREUL COMPANY

5222 Crane Ave., Detroit, Mich.

Specialists in fabricated CATALIN products for the automobile trade, radiator ornaments, knobs, handles, fittings of all types. Equipped to do quality and quantity production work.

•

KREST MANUFACTURING CO.

329 E. 29th Street, New York, N. Y.

Specialists in automobile gear shift knobs, beer and soda fountain dispenser handles, hardware items, radio fittings, razor handles and similar items.

•

ROGERS MANUFACTURING CO.

Rockfall, Conn.

Silverware items our specialty, also furniture trim, manicure and cutlery items, lamp parts of various description.

CATALIN is furnished by us only as raw material in the form of rods, sheets, tubes and special castings. We do not manufacture finished products and for your convenience, offer herewith a partial list of authorized CATALIN fabricators.

Should you desire any special information on manufacturing problems, our Engineering Department will be glad to cooperate with you and, if required, recommend fabricators in your locality who are suitably equipped to do your work.

For your convenience, we maintain at our New York office a stock room and fully equipped sample department.



DOUGLAS TURNER

3025 Watson Blvd., St. Louis, Mo.

We specialize in the fabrication of all types of CATALIN products for various applications. Our equipment is of such diversified nature as to enable us to take care of your work promptly and satisfactorily. Your inquiries are solicited.

•

SHOREHAM MFG. CO.

4817 69th St., Winfield, L. I., N. Y.

Fabricators of millinery, dress and shoe ornaments, display fixtures of various types, also desk sets. We specialize in the carving of CATALIN.

•

INDUSTRIAL PLASTICS

643 W. 43rd St., New York, N. Y.

Featuring CATALIN in toilet articles such as powder containers, compacts, rouge boxes, also tooth brush handles and brush backs of every description.

•

J. M. KING MANUFACTURING CO.

American & Diamond Sts., Phila., Pa.

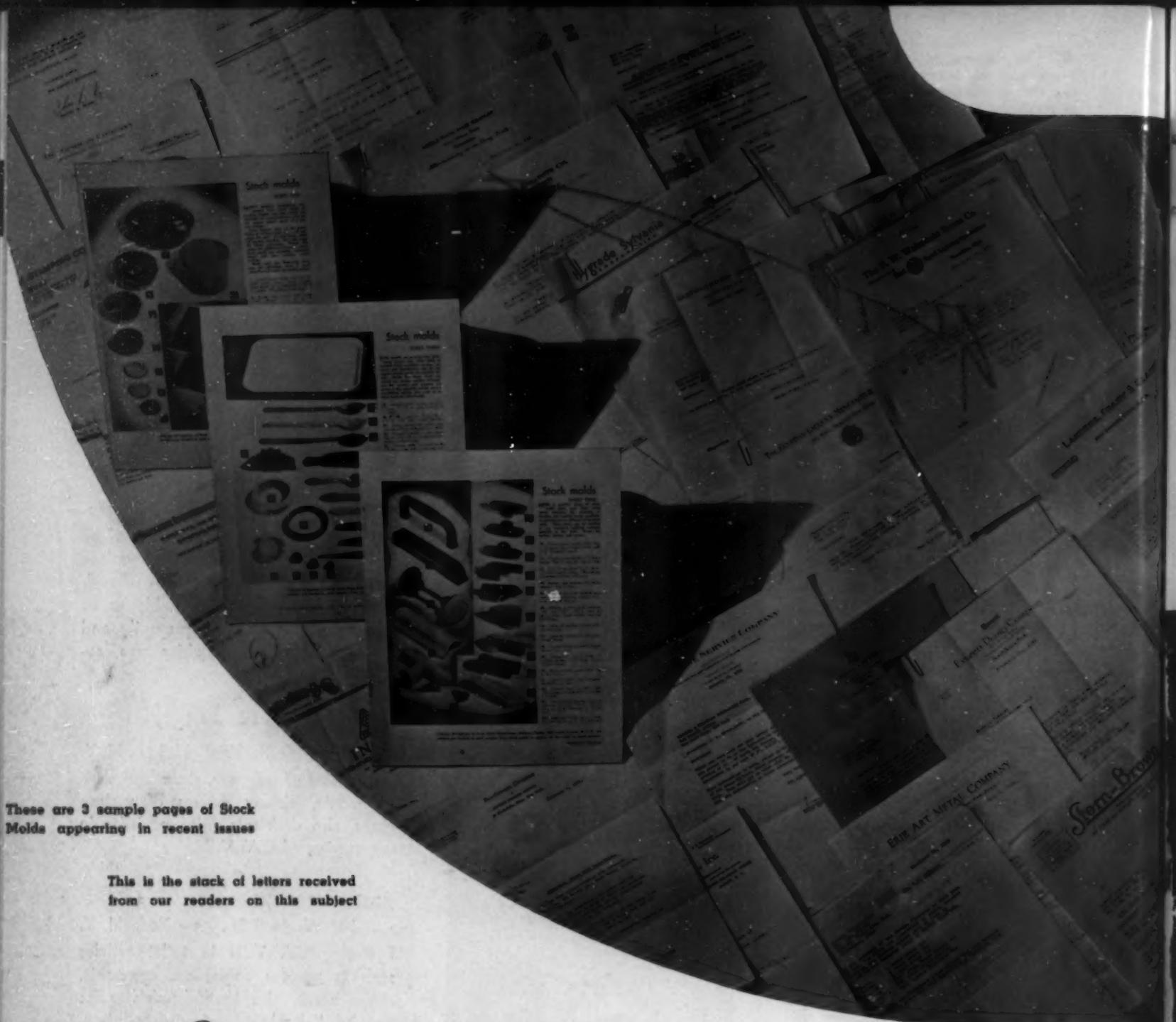
Game accessories such as chessmen, dominoes, checker and backgammon men, ecclesiastical goods of various description, also parts for electrical and household appliances.

•

COLONIAL KOLONITE CO.

1106 W. Huron Street, Chicago, Ill.

We maintain a completely equipped plant for the fabrication of CATALIN products of every description. Your inquiries will receive our prompt and careful attention.



These are 3 sample pages of Stock
Molds appearing in recent issues

This is the stack of letters received
from our readers on this subject

Real READER INTEREST

A few months ago we started a Stock Mold Sheet in each issue of MODERN PLASTICS. It appealed to us as a good idea, but evidently we didn't realize just *how good*. For the reader response has been tremendous. Best of all, the letters received were not just idle inquiries—they meant business. Actual orders have resulted for many molders.

There is just *one* way to contact the plastics industry—completely and economically—and that is through MODERN PLASTICS. Some actual proof appears on next page.

We are interested in securing a satisfactory handle for the removable panels which we have in our air-conditioned cabinet. In order to avoid die cost we would like to buy someone's standard plastic handle and adapt it to our needs . . . Lennox Furnace Co., Inc., Syracuse, New York.

The items shown on sheet four of MODERN PLASTICS all have possibilities of a premium appeal. If you will advise those manufacturers to send samples and quote prices on these particular things, we might be able to be of help to them . . . PREMIUM ADVERTISING ASSOCIATION of AMERICA, Inc., Jersey City, N. J.

Attached is blue print of a small proposed handle. We would appreciate it if you could advise us of a molder who has a stock mold of a part very similar and from whom we could purchase parts. For your information we would probably purchase these in lots of 3,000 to 5,000 and use about 12,000 per year . . . The Trumbull Electric Mfg. Co., Plainville, Conn.

Please send us one of these boxes immediately for our inspection, giving us your best prices in quantities of five, ten and twenty-five thousand, including whatever cost there will be to emboss or do whatever work is necessary . . . Bromberg & Co., Birmingham, Ala.

We are in the market for from 3500 to 5500 composition or bakelite bushings with knurled top and threaded on outside of the side wall . . . Hunter Fan and Motor Company, Fulton, N. Y.

We would like to congratulate you on stock molding listings. We would very much like to see stock molds of control knobs. We have use for knobs of this kind and have contacted a number of molders. As there must be many users of knobs of this type, a good design in a variety of sizes up to about 3 inches in diameter would find a ready sale . . . Gould Storage Battery Corporation, Depew, New York.

We are interested in Stock Mold 36 and should like to have a sample or two and a quotation on lots of 10,000 . . . The Fitzgerald Mfg. Co., Winsted, Conn.

We are enclosing blue print and if you have a stock handle which you think would look well on the item, we would be pleased to secure a sample, together with your lowest price in 10,000, 25,000, and 50,000 lots . . . Revere Copper and Brass, Inc., Rome Manufacturing Company Division, Rome, N. Y.

Please tell us who manufactures the box for desk use, holding blank paper for memorandum slips. We are interested in quantity of 2500 and up to 5,000 . . . The Gorham Company, Providence, R. I.

These are typical examples of what the letters contain

MODERN PLASTICS
425 Fourth Ave. New York City

Molded magnifier

BY JEAN MAYER

HAVE you ever wanted to find out whose signature was on a letter and you couldn't decipher it? Have you ever wanted to examine a piece of cloth, leather, metal or an engraving closely to discover any flaws? Have you ever looked at an old photograph album and wondered who that was standing next to you twenty years ago in high school? If you have, you will appreciate the trickiest instruments called Flash-O-Lens ever surrounded by molded plastic parts.

Essentially both items are a combination of magnifying lenses with a small electric lamp. However, the illustration shows that one is plugged into an outlet and is electrically lighted while the other is a battery model which operates exactly like a flash-light.

In the battery model the flash-light unit is screwed on to a molded white urea housing which contains a double Bausch & Lomb lens system, thus providing five power magnification in a two inch field of vision. These lenses (one double convex and the other plano convex) are precision ground and polished to exact curvature. Between the lenses is a spacer ring which holds both glasses in exact focus in the molded urea housing. They are, however, very easily taken apart for cleaning, but when reassembled are automatically refocused by the spacer ring as it sets into place.

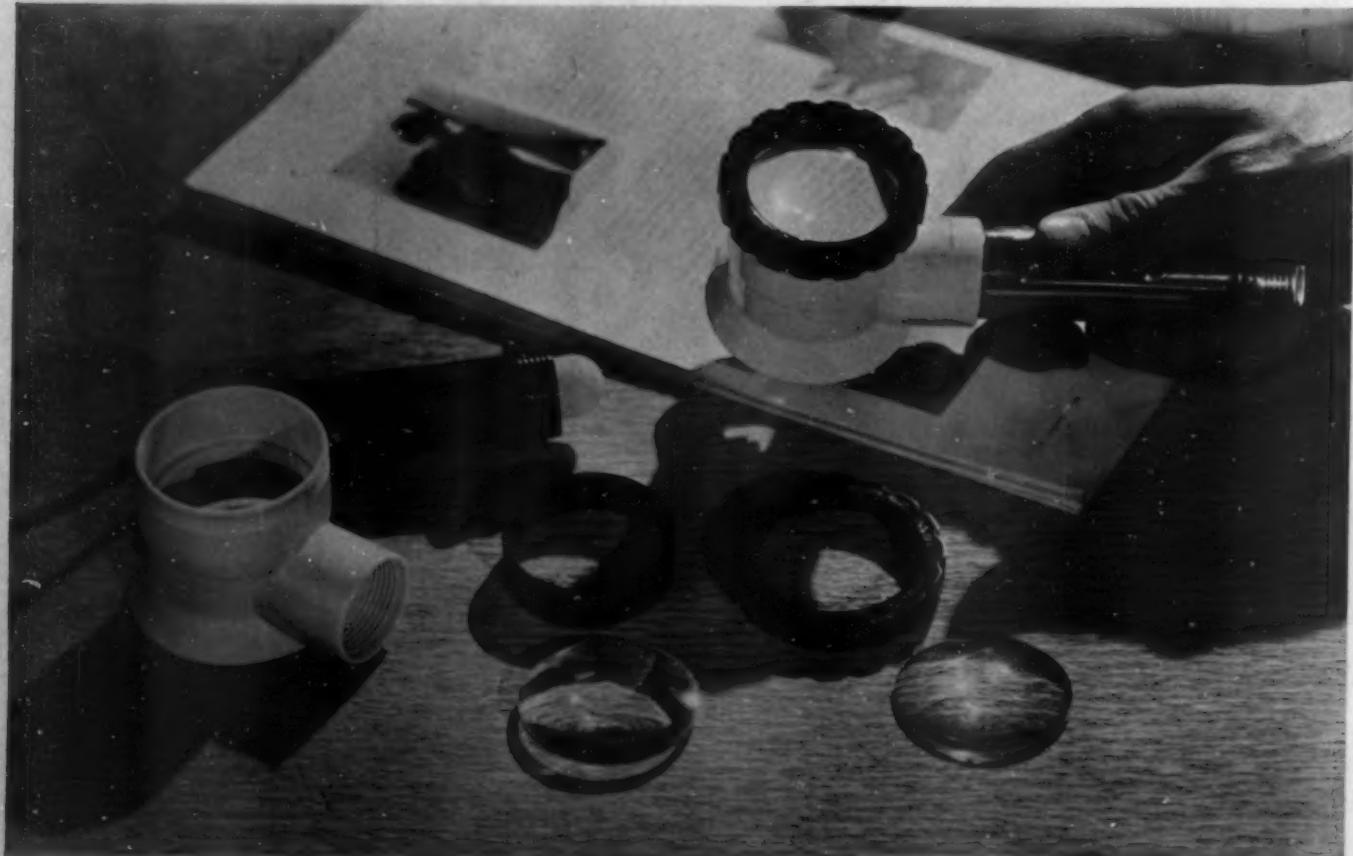
The lenses are held in position by a molded

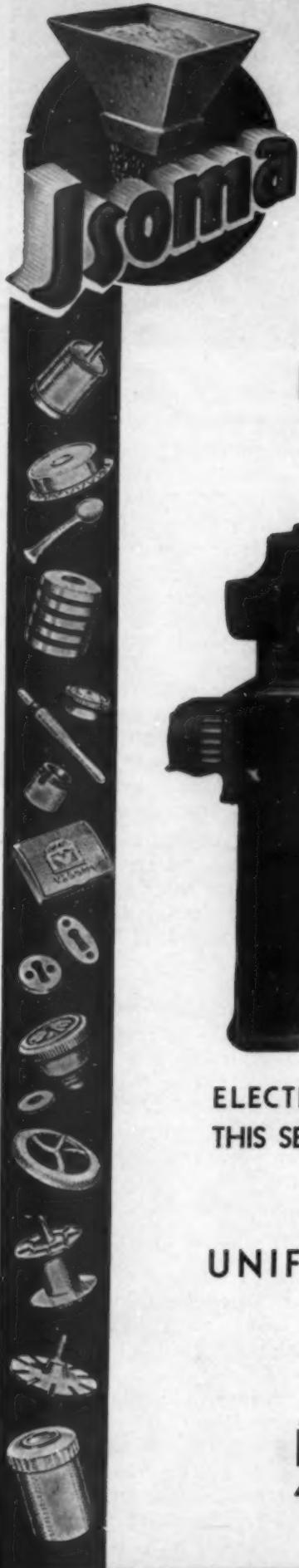
phenolic ring, simply decorated. It is this combination of urea and phenolic which requires precision molding. Both materials have different shrinkage value and it was necessary to make some very careful calculations before completing the molding of these parts. You will also note from the illustration that there are two side cores in the body of the piece, the one to permit an instrument, or pencil, to be inserted into the field of vision or on the object under observation and the other a threaded opening which screws on to the body of the flash-light.

The flash-light unit is made of metal and has a push button of phenolic regulating the little bulb at the top. The battery model has a metal base which is cut open into a cross-like shape. This is to allow the eye to focus on a smaller area and provides a sturdy base rest as well. The lamp is so placed that the direct light does not reach the eye of the observer.

The electric model is supplied with identical units except for the metal base and for its handle which is phenolic molded threaded into the lens container. A rubber covered wire is supplied which permits plugging into any A.C. or D.C. outlet. The illumination is controlled by a molded switch-off and on controls being done in red and black.

Here we have a combination of two phenolic parts and one urea all fitting together very nicely and so molded that the manufacturer has had no assembly difficulties at all since the job was first started. Molded threads have no rough edges and the molded parts will remain lustrous indefinitely. Flash-O-Lens magnifiers are practical for chemists, doctors, bankers, for close inspection work and for a host of similar purposes making them general utility items.



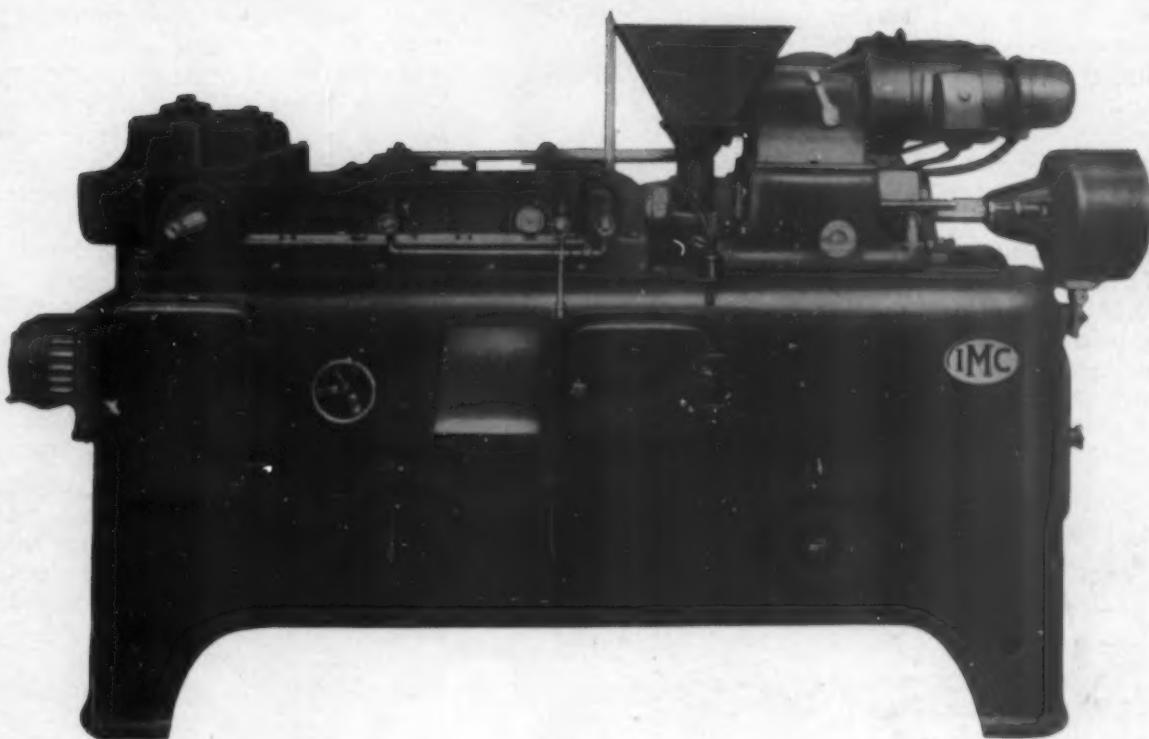


INJECTION MOLDING!

ANNOUNCING

— THE I. M. C. WAY —
of

FULL-AUTOMATIC MOLDING



ELECTRIC TIME CLOCKS CONTROL THE MOLDING CYCLE OF
THIS SELF-CONTAINED AUTOMATIC INJECTION MOLDING MACHINE

— RESULTS —
UNIFORM PRODUCTS
MAXIMUM EFFICIENCY
MINIMUM COST

INDEX MACHINERY CORPORATION
49 CENTRAL AVE. CINCINNATI, OHIO

WRITE FOR YOUR COPY OF OUR CATALOG

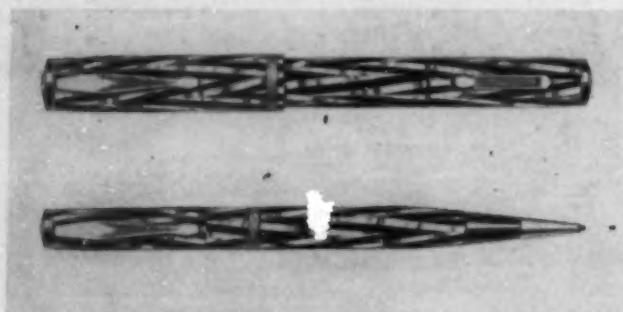
Hard to imitate

BY A. J. ST. JOHN

The ever pressing problem confronting manufacturers of quality merchandise is to find materials which possess attributes of exclusiveness. Exclusiveness, however, notwithstanding the high quality and workmanship of the finished product, itself, cannot long endure unless certain design elements are introduced into the material to render it difficult to imitate or copy. It is, therefore, a matter of great importance that proper consideration be given in the selection of a material possessing those qualities through which exclusiveness in design or pattern can be obtained.

Of the many plastic materials now available to designers, thermoplastic materials offer the best means of incorporating into them design elements which can impart to the finished product a character of individuality. Some months ago William Bowker, writing for *MODERN PLASTICS*, presented the many possibilities inherent in thermoplastic materials to achieve original and novel variegated color effects.

Thermoplastic materials, i. e., cellulose nitrate and cellulose acetate plastics, because of the many mechanical manipulations necessary in their process of manufacture, such as kneading, filtering, rolling, pressing, sheeting, re-stacking, cross-sheeting and so forth, provide opportunity for the colorist as well as the designer, to achieve effects of originality and exclusiveness which are difficult to duplicate.



Very often the creation of a design, such as shown in the illustrations of the Waterman Emerald Ray pens, is the result of months of painstaking development work on the part of the colorist. Because of the difficult work involved in creating a design of this type, and also because those who attempt to imitate it frequently fail to achieve the same effects, the design remains exclusive as long as the manufacturer cares to feature it.

The L. E. Waterman Company in selecting this pearly ray pattern of Celluloid for its "Silver Ray" and "Emerald Ray" fountain pens is secure for a long time to come against imitations by cheaper products—the nightmare of every quality merchandise manufacturer. For those confronted with the problem of finding materials possessing originality in design, thermoplastic materials offer a modern vehicle through which they can achieve it.



Lamp shade materials

Featured at the New York Lamp Show held at the Hotel New Yorker recently were Lumarith lamp shades, known for their mellow, soft colors. This type of shade material, made by the Celluloid Corporation, is of the same basic form as the Celanese fabrics. During the past year it has been extensively used in industry because of its remarkably practical characteristics, and the current year promises a much wider use of this material. Lumarith comes in four types, namely, Charmour, Clair de Lune, Crystaloid, and Tutone. A bit of soap and warm water will remove all stains, spots, and dust without endangering the delicate coloring. It is reported to be heat resistant, non-inflammable, odorless, and durable because of its plastic, resilient and pliable nature which makes it possible to fabricate easily and withstand long usage.

Lamp shades of Plastacele, a cellulose acetate plastic recently developed by the duPont Viscoloid Company were shown for the first time in the company's exhibit also at the same show. A variety of new colors and finishes were displayed on sample panels of the material and in models of lamp shades from manufacturers who are using it.

The successive stages of development of this plastic from the raw cotton to the finished product was a feature of the showing. This material, which is adaptable for stretched shades or for fine or wide pleating, offers a wide range for versatile decoration and styles, including painted shades with motifs of flowers or ships, looped cords and flat flowers ornamenting a pleated lamp, shades of silvery moire, and classic models etched with gold.

Design firm reorganizes

Announcement was made recently of the formation of Harold Van Doren and Associates, industrial designers of Toledo, Ohio, to supersede the firm of Van Doren and Rideout which was recently dissolved after a three-year partnership.

Mr. Van Doren will continue to handle designs for The Toledo Scale Company, The Goodyear Tire and Rubber Company, The Maytag Company, The Plas-kon Company, and numerous other accounts from the Toledo office. Other members of the firm some of whom have gained national recognition for their work are Robert C. Deiggert, Edna Remmert, W. F. Brecht, and R. K. Knoblaugh.

Speaking of speed

The new process to manufacture fibrous glass for textile purposes is drawn at the rate of 50 miles per minute. That was the statement of U. E. Bowes, director of research for the Owens-Illinois Glass Company, when questioned about the recent licensing of a glass manufacturing firm in Dusseldorf, Germany, to produce such glass in Europe. Director Bowes, pressed for further facts of a kind "the layman is better able to understand," spun off a few statistics regarding the so-called spun glass that left newspapermen a bit bewildered, but fascinated by the modern miracles being wrought with one of man's oldest known materials.

"The silk worm is a marvelous little fellow in supplying textile fibre," said Mr. Bowes, "but glass technicians of today have the advantage in spinning. The silk worm requires several weeks to spin 6,000 feet of fibre, but we can draw molten glass into a smaller fibre, one that is many times stronger, and can equal the silk worm's yardage in three seconds. Our research men can convert a pound of ordinary molten glass into a single fibre that would reach round the world, a strand only $\frac{1}{20}$ th the diameter of human hair, so fine that more than 100 are needed to assemble a strand the size of No. 50 thread. The drawing process is faster than the eye can observe. The muzzle velocity of a Springfield army rifle bullet, for instance, is about 52,000 feet per minute but our glass fibre is drawn at the rate of some 260,000 feet per minute. That's 50 miles a minute, or 3,000 miles an hour."

Versatile material



REPRINTED FROM DUREZ MOLDER

"All I did was to pull
the lever and there she was"

THERE IS NO SUBSTITUTE FOR EXPERIENCE



Aviation's requirements are: extreme accuracy and finest quality. These Pioneer Instrument Company pieces are examples.

Insulated wire connected to silver rings and molded together.

"If It's Moldable, Tech-Art Can Mold It"

TECH-ART 'PLASTICS CO.

21-21 41st STREET, LONG ISLAND CITY, N.Y. STILLWELL 4-3490



You won't need to make excuses to your customers if you use MAKALOT. It cures quickly, flows more freely, does not stick or stain, requires less heat and pressure.

A few of our specials—

- No. 1277 Non bleeding Black, for closures.
- No. 66-E Impact with a beautiful finish in black, brown or colors. Excellent flowing and curing qualities and great strength.
- No. 75-H Black and brown. Used by practically all of the large molders of heater and switch plugs on account of its remarkably quick curing qualities—IT DOES NOT STICK.
- No. 1040 Low loss for Radios, Airplanes, etc.
- Also—Oil Soluble Resins, Odorless Laminating and Punch Stock Varnishes and Resins.

MAKALOT CORPORATION

262 Washington Street
Boston Mass.

Factory, Waltham, Mass.

Manufacturers of Molding and Paper Impregnating Resins, Lacquers, Varnishes and Cements

Monsanto

SOLVENTS, PLASTICIZERS AND MISCELLANEOUS INTERMEDIATES

Included in the Monsanto list are products that find an increasingly wide application in America's major industries. An opportunity to furnish service data and discuss your present or potential requirements will be appreciated. Such discussions are often mutually advantageous.

Monsanto Chemical Company

St. Louis, U.S.A.

New York • Boston • Chicago • San Francisco • Montreal



Chemicals

Backstage

WILLIAM H. ADAMS, Jr. who wrote the interesting article "Phenolic resins for big moldings" on page 22 was graduated from the Massachusetts Institute of Technology in 1925 with a Bachelor of Science degree in chemical engineering. From 1925 until early 1930 he was employed by the Diamond State Fibre Company and its successor the Continental Diamond Fibre Company, in plant control and development work, first with vulcanized fibre and later with phenol-formaldehyde resins and laminated products. From 1930 until 1933 he was in charge of the development of phenolic resin molding powders for the Continental Diamond Fibre Company, and from 1933 up to the present time he has been the technical director of the Haveg Corporation, which is an associate company of the Continental Diamond Fibre Company.

JO CHAMBERLAIN whose little story "Giftwares that sell" is on page 14 is a graduate of the University of Michigan, University College and the University of London. He has been writing for some time on industrial and general items for Review of Reviews; was formerly in newspaper work in Cleveland; and has written on modern industrial design for other publications. At one time he was associated with Norman Bel Geddes although not as a designer. He writes also for Colliers, the Times, and Bradstreets' Weekly, but his interest in industrial design still finds occasional expression in interesting little contributions of this sort.

AL HAYWARD, whose article "Laboratory press for research molding" appears on page 27, is the pseudonym of the first reticent writer we have ever known. Mr. Hayward spent considerable time digging out information about the part plastics are playing in research laboratories and with the co-operation of Fred S. Carver, manufacturer of the laboratory press, he shows clearly a number of unusual instances in which plastics are used for research work.

Letters from readers

Editor, MODERN PLASTICS:

. . . I believe that there would be an appreciable market for control handles or knobs having the following characteristics:

1. Diameter: Approximately $2\frac{1}{4}$ " to $2\frac{1}{2}$ " in the form of a flat knob something on the order of the molded valve handle.

2. The handle should be arranged for easily applying to a round shaft in such a manner that the attachment is positive but can be easily released in the event of its becoming necessary to remove the handle from the shaft. In this connection provision should be made for attaching to a round shaft which will eliminate expensive machining and a suitable diameter. Furthermore, by making a design which will clamp or otherwise attach to the shaft without drilling and reaming for taper pins or the like, it will be a very simple matter to replace handles in case of breakage. Quite a number of firms are using



Manufacturers of Machinery and Maintenance Engineers have found that Insurok Gears make for quiet operation, greater efficiency, and insure longer life for their equipment.

Your regular gear cutter can supply you with any quantity of INSUROK gears in the style and of the size to fit your requirements.

INSUROK "a superior laminated phenolic product," in sheets, punchings, gear blanks, pump valves, fabricated parts, in grades and thicknesses for countless applications. Insurok may be sawed, drilled, turned, punched, tapped, planed, milled or sheared with perfect ease . . . readily fabricated in your own factories.

INSUROK MOLDED PARTS are supplied finished to close dimension tolerance, shaped and ready for installation in your equipment.



Millions of pieces from the tiniest simple designs to the largest intricate precise shapes, some weighing more than a hundred pounds, are molded or laminated every month in the plants of the Richardson organization, the largest in the United States devoted exclusively to the plastic arts.

Richardson can supply your every requirement and you may be assured that you will receive the type and quality of plastic parts especially suited for your requirements.

As custom molders of Plaskon, Beetle, Durez, Bakelite, Resinox, Indur, Tenite, and all forms of Synthetic Resin Plastics, the resources of our Research Laboratories, Design and Engineering Departments are at your command.

The RICHARDSON COMPANY

FOUNDED 1858
Melrose Park, Ill. Cincinnati, Ohio New Brunswick, N. J.
Detroit Office: 4-252 G. M. Bldg. Phone Madison, 9386

CRESYLIC ACID

CASEIN

Dibutyl Phthalate
Diethyl Phthalate

Dimethyl Phthalate
Triacetin

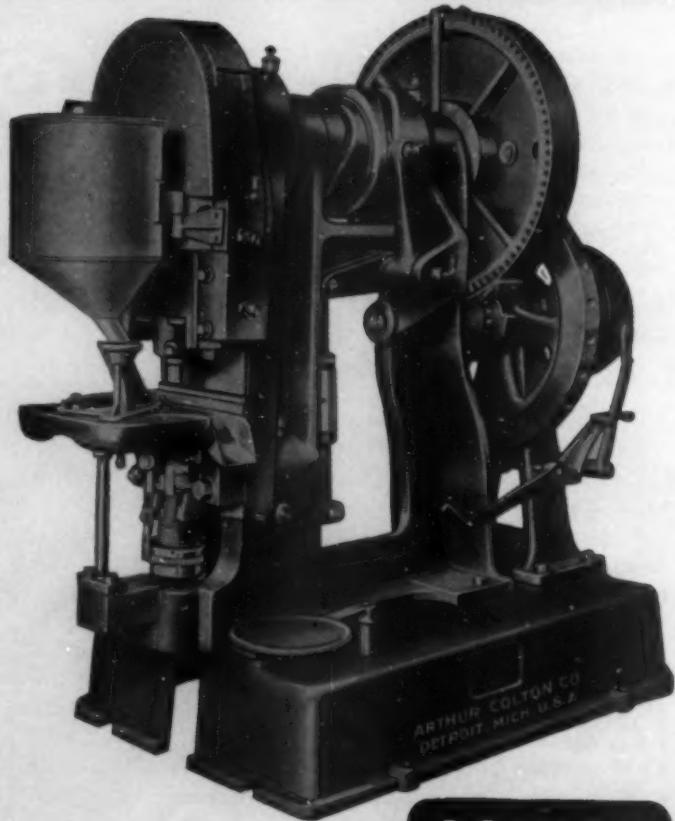
AMERICAN-BRITISH CHEMICAL SUPPLIES, Inc.

180 MADISON AVE.,
NEW YORK, N. Y.

COLTON Preforming Machines have won wide usage because of their inherent sturdiness, their uniform, speedy and satisfactory performance.

Note the new, improved $5\frac{1}{2}$ Tablet Machine shown at right. The solid steel frame insures perfect operation; the improved die fasteners, improved cam construction, heavier ejecting arm brackets and vanadium steel plunger make possible high speeds without fear of breakdown or lowered quality. In every particular, we believe, this machine is by far the finest the market has to offer.

The $5\frac{1}{2}$ Tablet Machine makes tablets up to 3" in diameter and having a fill depth of $2\frac{1}{8}$ ". Other Colton Preforming Machines—single punch, multiple and rotary—are likewise outstanding in construction and performance. Write for literature on these machines or have our engineers visit your plant—



ARTHUR COLTON CO.
DETROIT, MICHIGAN

COLTON
DETROIT

Backstage

handles made up in this manner but we find them to be quite unsatisfactory as the attachment consists of only a small set screw which is not a sufficiently good mechanical lock.

3. The knob itself should be insulating throughout for voltages up to 600 volts. Furthermore, it should have, either as part of the regular design or as an alternative, a skirt extending far enough along the shaft to provide insulation to the steel front panel through which the hole is provided for the control shaft.

4. Means should be provided to accommodate shaft diameters of from $\frac{5}{16}$ " to $\frac{1}{2}$ ". Each knob need not be flexible to this extent but the molder should be in a position to supply inserts to fit $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ " and $\frac{1}{2}$ " diameter shafts. If possible an indicating means such as a large arrow across the face of the knob to show position of the switch would also help to make it of more universal application.

If the foregoing features can be incorporated in a suitable product which can be sold at a reasonable price, we will use a fair quantity and I know of several other firms that will be equally interested.

I appreciate that there are a number of knobs now available but mostly they are not suitable for industrial service, the set screws, etc., being entirely too light and furthermore, with the type having a threaded insert, it is not a very satisfactory means of assembling which will enable the knob to turn the control switch in both clockwise and counter-clockwise directions.

Very truly yours,
E. W. Breisch

GOULD STORAGE BATTERY CORPORATION
Depew, N. Y.

Editor, MODERN PLASTICS:

There has been called to our attention an item known as a non-spill spoon. We have been unable to find any information as to the manufacturer. Would it be possible for your company to inform us as to the manufacturer and location?

Thanking you, we are

Very truly yours,
Paul Zwoyer

PLANO MOLDING & MACHINE COMPANY
Plano, Illinois

Editor, MODERN PLASTICS:

As a manufacturers' agent your magazine appeals to me as a wonderful production illustrating one of the future commodities. I am indeed interested in the production of plastics.

I have represented the largest hardware and fancy goods wholesale house for the past twelve years, and have realized that the time has now arrived in Australia when the stores want to deal direct with the manufacturer.

I have decided to set myself out to supply their requirements on a small commission basis, and candidly am just about to commence.

A New Name In Plastic Molding



CONSOLIDATED MOLDED PRODUCTS CORP.

Precision Molders in All Plastic Materials

More than half-a-century of plastic molding service is back of this new name. It enters the field with an enviable reputation . . . equipped by experience and facilities to render a complete plastic molding service in all materials, to all industries.

Continuing with the same personnel and facilities which have earned a position of leadership for the business now operated by Consolidated Molded Products Corporation.

CONSOLIDATED MOLDED PRODUCTS CORPORATION

SCRANTON
PA.

New York
Chicago

Cleveland
Detroit

FORMERLY MOLDED PRODUCTS DIVISION
OF AMERICAN RECORD CORPORATION



NATIONAL

INDUSTRIAL CHEMICALS

SERVING THE SYNTHETIC RESIN, PLASTIC SOLVENT AND PLASTICIZER INDUSTRIES

Phthalic Anhydride

Maleic (Toxiclic) Acid

Maleic (Toxiclic) Anhydride

Malic Acid

Succinic Acid

Succinic Anhydride

Fumaric Acid

Descriptive booklet showing our complete line of coal tar derivatives on request.

We solicit your inquiries on all organic products.

NATIONAL ANILINE AND CHEMICAL COMPANY, INC.

80 Rector Street

New York, N. Y.

Branches and Distributors Throughout the World

INTERMEDIATES



I would be extremely pleased if you can put me in direct communication with manufacturers of plastics, also suppliers of the necessary powder required to produce these articles.

Yours faithfully,
Noel Deller

Room 3 Fourth floor
Eldon Chambers
Sydney, Australia

Premix?

Who knows the name of the manufacturer of "Premix," a new molding compound? We have several readers who would like to know.

Keeping posted



Molded desk trays

The Accurate Molding Corporation, molders of plastics products, is offering a new stack of desk trays which have a marked advantage over the old type wooden and wire correspondence baskets and racks. The trays, built in a vertical series, are revolving. Each is independent of the others and may be removed without disturbing either of the remaining depositaries. These phenolic trays come in mahogany, walnut, oak, or black finish and standards are chromium plated. They are space-saving and may be securely clamped to the desk.

These desk trays approach very closely those made in England (MODERN PLASTICS, September 1934) except that the molded bracket which attaches to the upright standard is heavier in construction and more durable.

Synthetic rubber

Although this item can hardly be considered late news, it occurred just one day too late to include it in our February issue. It has to do with the very interesting luncheon held at the Biltmore late in January, at which synthetic rubber was actually made by each guest, under the direction of J. C. Patrick, inventor of Thiokol, pioneer synthetic rubber in this country. Dr. Patrick is chief of research for the Thiokol Corporation and presented some interesting thoughts.

The startling development of this synthetic rubber was strikingly demonstrated, and like Goodyear's discovery of vulcanizing, which made rubber, Dr. Patrick's discovery of Thiokol was an accident. Today

"Stokes" in Modern Plastics

MEANS **QUALITY** in
Molded Products



Molders Since 1897

In the modern industry of plastic molding, the name STOKES is identified with high-grade products and superior service in molding for thirty-nine years. May we suggest that if your problem seems a particularly difficult one you let our experts work with you toward its solution.



Trenton, N. J.

Canadian Plant, Welland, Ontario

For PLASTICS of Uniform Quality

FORMALDEHYDE
PARA FORMALDEHYDE
HEXAMETHYLENAMINE



HEYDEN
 CHEMICAL CORPORATION
 50 UNION SQ. NEW YORK, N.Y.
 180 N. WACKER DR. CHICAGO, ILL.
 factories
 GARFIELD, N.J. PERTH AMBOY, N.J.

Use CHEMICALS of Uniform Strength

Our products are particularly adapted
 to the requirements of the Plastics
 industry

We specialize in
**MACHINES for CELLULOID, CATALIN
 and other PLASTIC MATERIALS**

Bench Saw Tables . Jig Sawing Machines . Rod
 Turning Machines for Beads, etc. . Hand Lever
 Presses . Gold Inlaying Machines . Electric Steam
 Heater Tables . Single and Multiple Spindle Drilling
 Machines . Shaping Machines . Frazing and
 Engraving Machines



No. 1 Electric Steam Table

ALSO DIES • TOOLS • MOLDS • AND DIES
 FOR INJECTION MOLDING

Send for Our New Catalog "E"

STANDARD TOOL CO.
 73-75 WATER STREET

LEOMINSTER

MASS.

**KUEHNE
 CHEMICAL DIP
 POLISHES**

**FORMOPOL
 LACTOPOL
 MODIFIED POLISH
 REGULAR BUTTON POLISH**

for

TRANSPARENT BUTTONS	—	PLASTICS
CASEIN	—	NOVELTIES
		PHENOLICS

Let us show you how to SPEED UP your polishing—cut your costs—do better work. Write for detailed information.

KUEHNE CHEMICAL CO.
 manufacturing chemists
 P. O. BOX 165 ELIZABETH, N. J.

Thiokol is used in a thousand different ways, principally to replace rubber in situations where oil, gasoline and exposure to sun deteriorate the genuine product yet have no effect whatever upon Thiokol.

It was brought out at the meeting that the United States is in a position of independence as far as rubber requirements are concerned in time of war. Mr. Longstreth, President of the Thiokol Corporation, showed the quantities of synthetic rubber that can be produced by his concern and by the du Pont companies with their recently completed plant for the manufacture of Duprene. An acre of rubber trees yield approximately five hundred pounds of rubber in five hundred years. An acre of Thiokol, that is, the plant equipment to produce it, can turn out two hundred tons in five hours. And the raw materials, sulphur, salt, and natural gas are practically inexhaustible.

Other important uses mentioned by various speakers were: the development of synthetic rubber powder which can be used for plastic molding purposes, eliminating the longer production time necessary for vulcanizing rubber; the wide application in automotive oil industry and filling station uses where gasoline and oil are important deterrents of rubber life; general specifications of synthetic rubber by the War and Navy Departments for use in aeroplane and lighter-than-air equipment; widespread possibilities in the printing industry—Thiokol blankets for newspaper printing already being widely used by such leading dailies as the New York Times and the New York Daily News. Printing plates of synthetic rubber have also proved certain superiorities to both rubber and metal plates. And then, the possibilities of synthetic rubber replacing lead in the cable industry.

An article dealing especially with the properties and possibilities of Thiokol for molding by orthodox plastic molding methods is being prepared and will be presented in an early issue of this magazine.

Garter fittings in plastics

Several manufacturers of hose supporters are adapting Pyralin as garter fittings and clasps, whereas in the past they have used metal, which is still being used by many manufacturers. They have found that this plastic material will not rust or tarnish from perspiration, and may be colored in keeping with the garter fabric.

A new name

A change became effective February 1, 1936, when Consolidated Molded Products Corporation supplanted the Molded Products Division of American Record Corporation. Operations will be continued in the Scranton factory, and general offices of the company are located at the plant, 409 Cherry Street, Scranton, Pa.

John P. Case is president of Consolidated Molded Products Corporation, an office which he held with the former company. R. H. Allen is vice president and E. A. Dix is secretary-treasurer, both of whom were formerly of the Molded Products Division of American Record Corporation.

The molding plant of Consolidated Molded Products Corporation has been in continuous operation

for more than half a century, known for many years to the trade of "Scranton Button Brand." A large part of the company's molding business is still in the production of buttons, but their service today comprises molding in all plastic materials for all industries from either stock molds or upon special order.

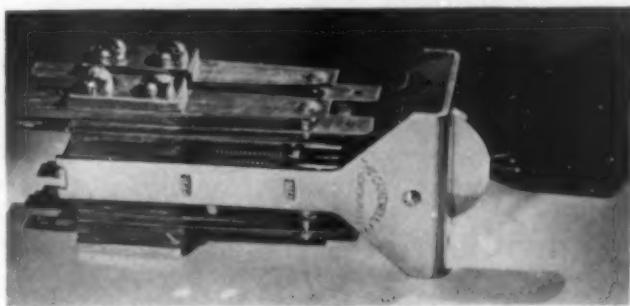
The molded products business formerly carried on by American Record Corporation at Bridgeport, Conn., and Scranton, Pa., will be consolidated at Scranton, and the name of the new corporation is thus better identifying its product and activities in the industry. The same district sales offices at New York, Chicago, Detroit and Cleveland, and the same factory and sales personnel will be continued by Consolidated Molded Products Corporation.

Mixing it up

The Lab-Mix Sr. has been built to meet a demand for a powerful, variable speed, non-sparking laboratory stirrer, which is most useful for making emulsions, dissolving dyes, gums and resins, waxes and bitumens, cellulose ethers, casein, glue, gelatin, starch, salts, complex organic materials, etc.

Actuated by a shaded pole type motor, it will run 24 hours daily without damage. It can be used only on 110 volts (50-60 cycle) A.C. Since it is non-sparking, there is no danger of explosion when mixing inflammable liquids, such as alcohol, benzol, etc. The speed may be varied by the rheostat. There is an off position on the rheostat which serves as an on and off switch.

It is provided with a screw clamp which fits any ring stand. The shaft and propeller are made of Monel. The pitch of the propeller may be changed with pliers to regulate mixing. A flexible 6 foot cord and plug are included so it may be plugged into any outlet.



Cam lever switch

The Gamewell Company has recently put out a new type of cam lever switch designed for circuits where it is desirable to have a positive stop in the center position for a switch mounted on a face plate. There is a series of springs inside the switch whereby electrical contacts are made or broken by means of the cam lever, and a considerable variety of circuit combinations is possible by means of arranging the springs and their contacts. This switch is rated for 110 volts direct current and from the standpoint of flexibility for different circuits, the positive center position stop is reported to be used here for the first time.



A Bargain in PERFORMANCE, SERVICE LIFE AND SATISFACTION

On platen presses, molds, vulcanizing machines and equipment requiring swivel movement of pipe lines, Barco Swivel Joints provide a definite money saving by uninterrupted service.

Barco Swivel Joints provide full 360° swivel movement with no tendency to bind where slight irregularities are encountered. They will not leak under rapid temperature changes. As the gaskets give long service, and cannot blow out, the cost of maintenance is very low.

Send for Catalog 255

BARCO MANUFACTURING CO.

1813 Winnemac Avenue,
CHICAGO, ILLINOIS

Many manufacturers of equipment are standardizing on Barco Flexible Joints.





What pleases us most? NOT that we rate among the best equipped molders in the field. NOT that our presses are among the most modern, our workers among the best trained and most able . . . But this: Back of the molding rooms, in our engineering and mold making departments, are the skilled men who know how to improve methods and materials . . . men who know how to design for faster cure, lighter weight, greater strength, improved beauty, faster sales. Write us!

TRADE
MARK
DIEMOLDING Corporation
CANASTOTA
NEW YORK



The "Alnor" self-contained portable Pyrocon is moderately priced, yet so quick and accurate in checking mold temperatures that it has speedily paid for itself in many molding plants.

Write for free booklet

ILLINOIS TESTING LABORATORIES, Inc.
428 N. La Salle St., Chicago, Illinois

"Alnor" Pyrometers are also made in permanently mounted styles for continuous readings.

The use of phenolics is an important detail in the design of the switch. Its handle is black molded and of course enhances its appearance and provides desirable insulating features. The springs which carry electrical current must be held in place by screws going into the frame and it is equally necessary that they be insulated from the frame and from each other. Insulation from the screws is provided for by the use of laminated tubing. The springs are insulated from each other by phenolic separators in the form of flat strips. In fact the operation of this switch is naturally dependent on the provision of effective insulation and if this plastic material were not available its design would have to be something very different, and probably more expensive, the material being admirably suited to this kind of an assembly.

Motor operated valve controller

The demand for furnace temperature control with minimum disturbances to furnace atmosphere has resulted in the quite recent development by Automatic Temperature Control Co., of two new types of multi-position controllers known as the relatrol and the balancer. Both units produce a corrective movement in a valve or damper in exact relation to departure from the temperature setting, as measured by the actuating instrument. This corrective movement follows the temperature changes accurately and promptly. In external appearance both units are alike. A special relay is supplied, wired into the circuit between the actuating instrument and the motor mechanism. This relay embodies an electrically controlled null-point, and as full line voltage is used in both relay and power motor, extra responsiveness is secured to repositioning demand. The mechanism is housed in a sturdy, compact, cast-iron case which will withstand the rough usage of industrial service. The balancer is similar to the relatrol except that it is provided with automatic means of load compensation and is recommended where load changes will be of considerable extent and duration. The new relatrol action employed by these mechanisms can be used in conjunction with many standard pyrometers, flow meters and other measuring instruments, by slightly modifying the contact mechanism. In certain instances the required instrument changes can be made in the field. Where relatrol action is supplied for manual remote control, a hand operated index and dial replaces the actuating instrument.

District manager appointed

Richard L. Cawood, president of The Patterson Foundry & Machine Company, has announced the appointment of Kenneth S. Valentine, as district manager at New York. Mr. Valentine was sales manager of the Turbo Mixer Corporation of New York for eight years, until resigning to become connected with the Patterson Company. Previous to his connection with the Turbo Mixer Corporation he was chemical engineer at the Heller & Merz Company (now Calco Chemical Corporation) of Newark, N. J., and works manager at the Southern Dyestuffs Company (now Monsanto Chemical Company) of Nitro, W. Va.

Mr. Valentine is well known in the chemical and

process industries, and is co-author of the section, "Mixing of Material" in "Chemical Engineering Handbook", as well as various books and articles on mechanical problems of the process industries. He graduated from Columbia University in 1916, and is a member of the American Institute of Chemical Engineers.

Mr. Valentine will have charge of sales in metropolitan New York and in New England, and will, in addition, act in an advisory capacity on mixing problems in general.

American designer honored abroad

George Switzer, American designer and originator of new trends in typography, advertising layout packaging, store displays and international architecture, has recently been accorded high honor in design by recognition in *Gebrauchsgraphic*, a widely known magazine covering every field of commercial art. This publication, in showing eight pages of Mr. Switzer's work, called it "A sample of the best and most modern American commercial design."

Raymond now with Mack

N. E. Raymond, for many years prominently connected in the sales end of the plastics industry, has joined forces with the Mack Molding Company in Wayne, New Jersey, where he will serve in a similar capacity. Communications may be addressed to the New York office of the Mack Molding Company, 489 Fifth Avenue.

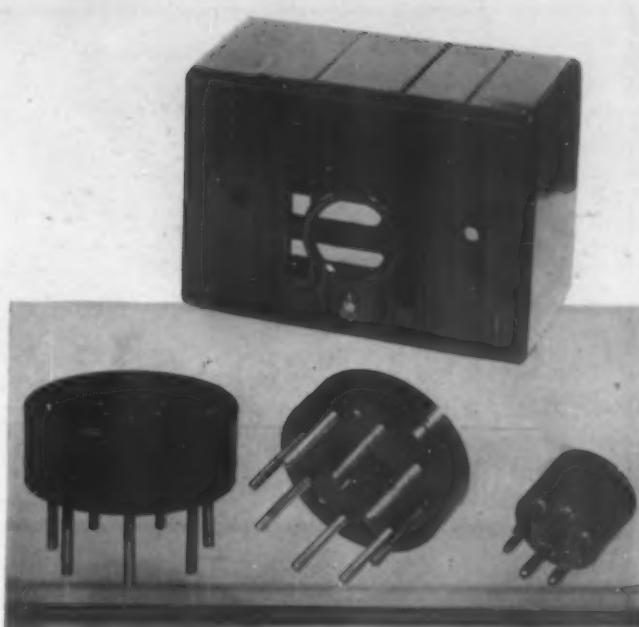
Design consultant

Egmont Arens announced the opening of offices as Industrial Design Consultant at 480 Lexington Avenue, on March 1st. He will specialize in product design, package design, and general counsel upon what he calls "the visual aspects of selling": i.e., color and form as they affect sales.

Mr. Arens has been for over six years director of industrial styling at Calkins and Holden. He has redesigned most of the private brands of The Atlantic and Pacific Tea Company, and has been design and merchandising consultant to such firms as Dayton Scales, Hobart Manufacturing Company, American Crayon Company, Pennsylvania Refining Company, General Foods Corporation, Acousticon, A. P. W. Paper Company, International Paper Company, International Salt Company, Higgins Inks, and many others. Mr. Arens is well known as a lecturer, and is author, with Roy Sheldon, of "Consumer Engineering."

Neil Currie goes to Ft. Wayne

Neil Currie, Jr., for the last six years manager of the General Electric Company's Philadelphia works, was made manager of its Fort Wayne works, it was announced recently by W. R. Burrows, vice president in charge of manufacturing. Mr. Currie succeeds Walter S. Goll who, although retiring as manager after 38 years of service, will continue with the company and will be available for special assignments. R. V. Good succeeds Mr. Currie at Philadelphia.



FROM COMPLETE CABINETS TO SMALL PARTS

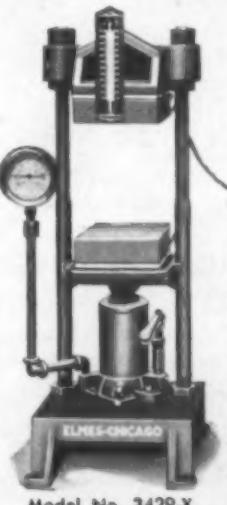
For Pilot, Emerson and other radio manufacturers we have molded many cabinets, including the largest sizes. Our experience also extends to small and difficult parts, such as the tube cases and testing sockets shown above. Whatever your problem may be, why not benefit from our modern plant, our mold-making facilities, skilled engineers and trained workers?

ASSOCIATED ATTLEBORO MANUFACTURERS, INC.
ATTLEBORO, MASSACHUSETTS

HYDRAULIC MACHINERY
ELMES
CHICAGO

LABORATORY TESTING PRESSES

Hand Operated & Adjustable



Model No. 3429-X

MODEL 3429-X
2 Sizes — 12 or 18 Tons.
Platens 8" square.
Vertical opening 16".

Equipped for Molding Tests with 6" square Hot Plates, Insulated Mats between plates and press heads, Industrial Type Thermometer and 3 Heat Switch to operate from electric light socket.

MODERATELY PRICED
SHIPMENTS FROM STOCK

Our Complete Line Includes Any Size or Capacity—Hand, Belt or Motor Drive.

THE CHARLES F. ELMES COMPANY HYDRAULIC MACHINERY
225 N. Morgan St. SPECIAL 84 YEARS MACHINERY ENGINEERING WORKS
Chicago, U. S. A.

DON'T TAKE OUR WORD FOR IT.

PROVE IT YOURSELF

THE USE OF OUR COTTON FLOCKS

OF SUPERIOR QUALITY
AND PROPER GRADE
INCREASES THE IMPACT
STRENGTH OF MOLDED
PRODUCTS AS MUCH AS 90%

ask for samples and prices

CLAREMONT WASTE
MFG. CO.
CLAREMONT, N. H.

The Country's Leading Makers



EXCLUSIVE PLASTIC JEWELRY FINDINGS

Stock items suitable for setting in brooches, rings and ear-rings, dress and shoe buttons, pendants, bracelets, picture frames, cigarette cases and boxes, compacts or any colored ornamentation. Special designs and shapes made to your order. Write us for information about our new mould finance policy on custom mouldings.

SYNTHETIC MOULDED PRODUCTS, Inc.
STONINGTON, CONNECTICUT

Books of the month

Molding in Sweden

Atkiebolaget Alpha, Sundbyberg, Sweden, has sent us its catalog of hydraulic molding presses which also includes some interesting moldings made by this Swedish concern. The Alpha Works, situated near Stockholm, enjoys a wide reputation for its high-class material testing machines such as the Brinell press, the Durometer for Rockwell test, the pendulum for impact test, etc. In addition, Alpha has developed its own department for molding synthetic resins which is reported to be the largest in Scandinavia.

Machinery catalog by Patterson

A 52 page book issued recently by the Patterson Foundry and Machine Co. pretty well illustrates its complete line of agitators and mixers which are used extensively in the manufacture of plastic materials. Printed on a good quality of coated stock, the catalog is well sprinkled with half-tone illustrations supplemented by tables and charts of specifications.

Spectrophotometer assemblies

The Gaertner Scientific Corp. has issued Bulletin #134 on spectrophotometer assemblies claimed to be accurate and unvarying for color identification.

Because of the various spectrophotometric measurements, this assembly is made up of separate units, available in a number of combinations as well as separately. The units include a light source, diverging rhombs, sample holders, collimating rhombs, photometer, spectrometer and suitable base with mountings. Booklet is available to those requesting it.

Catalog now ready

The twenty page catalog announced by The American Metal Hose Co., branch of American Brass Co. in the Books of the Month section, December issue, MODERN PLASTICS, is now available for distribution. Copies will be sent to those interested.

Winners of All America

(Continued from page 19) to fit the proper size tooth without any confusion. In addition to this, the stock is always in view and may be replaced when the various sizes run out. The new boxes have taken like wildfire, states the company.

The bronze award was won by Schulze Baking Company, Chicago, for its fruit cake box (3) designed by Paul Ressinger and molded of Durez by General Electric Company, West Lynn, Mass.

The Schulze fruit cake box was designed primarily to save 33 1/3 per cent in cost over more expensive boxes. The box fulfills this objective perfectly, but is handicapped somewhat in selling, due to the fact that the lids were never as effective as they could have been. However, the box sold well at retail, the Schulze company running out of these boxes before the Christmas season was over.

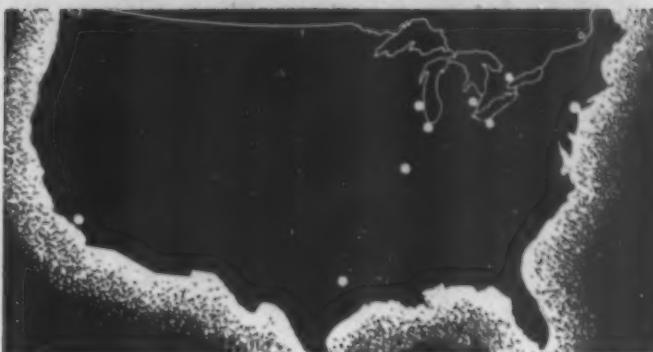
Phenolic resins—big moldings

(Continued from page 23) compounds, Haveg consists basically of a resin and a filler. For the resin, a phenol formaldehyde product is used, of a distinctly unconventional type. None of the conventional resins, like the solid molding powder type or the liquid varnishes used in laminating, are at all satisfactory. What is needed is a particularly strong, tough product, with unusual shock resistance, the maximum resistance to chemical attack, and the ability to operate continuously at elevated temperatures without becoming brittle. These properties are achieved by the proper selection of ingredients and conditions of reaction. The development of a resin with these properties proved no simple task, and was not solved until several years of research paved the way.

In regard to the filler, a special type of asbestos is normally utilized. The cellulosic fillers which usually form the basis of the more common molding compounds are not satisfactory for resistance against acids, except when low temperatures and concentrations are encountered. Strong, hot acids penetrate the mass and gradually deteriorate the cellulose. Even asbestos in its usual form is hardly suitable for resistance to hot acids. The asbestos used in this material has, therefore, been digested with hot acid to remove the readily soluble portions and, therefore, any chemical which may penetrate into the mass meets a filler which it cannot destroy. Asbestos is not the only filler applicable to the composition, and in fact, other fillers are frequently used when special properties are desired. For example, asbestos being a siliceous material, is readily attacked by hydrofluoric acid. Therefore, when Haveg is to be employed for service with this acid, a carbonaceous filler is employed instead of asbestos.

The finished material is tough and rigid, and while it can be broken by excessive abuse, it has sufficient shock resistance to withstand severe commercial service. In appearance, it is normally somewhat rough, although it can sometimes be machined and buffed to a fairly good polish. The color varies from yellow to dark amber and black. The specific gravity of Haveg is 1.6; the tensile strength is about 2200 lb. per square inch; the transverse strength averages 5500 lb. per square inch, and the compressive strength is about 10,000 lb. per square inch. Haveg has such a low coefficient of heat transfer that insulation of equipment to prevent heat loss is seldom necessary. Operation at temperatures as high as 265 degrees Fahrenheit, continuously or intermittently, is without effect on the material and it is not damaged by rapid temperature changes.

As would be expected from its composition, its acid resistance is of a high order. Practically any acid can be used with Haveg equipment except oxidizing agents like nitric and concentrated sulphuric. Weak bases like lime and ammonia can also be used, but the resin is of a type which is readily attacked by sodium and potassium hydroxides. Likewise some of the particularly good resin solvents like acetone have a gelatinizing effect which is eventually destructive while in general hydrocarbons are without effect on the equipment. It is particularly noteworthy that it



What Does This National Molding Service Mean to You?

It means, first of all, that wherever your plant is located, you are within overnight reach of a Kurz-Kasch service expert . . . a factory-trained engineer with a complete knowledge of all molding problems and a broad understanding of your related needs.

Beyond that, it means you are dealing with an organization that has proved its ability to serve all industry with quality products at economical costs.

Wherever you operate, we invite the opportunity to quote on your requirements.

The KURZ-KASCH

COMPANY

DAYTON, OHIO

CHICAGO

NEW YORK

CLEVELAND

LOS ANGELES

DETROIT

DALLAS

ST. LOUIS

MILWAUKEE TORONTO, CANADA

MOLDERS OF PLASTICS

LOOKS GOOD—WORKS BETTER



Bishop & Babcock Windshield Defroster

7-part windshield defroster molded of Bakelite by Reynolds. Light weight of plastics, a great advantage, because defroster is attached by vacuum cup. High speed rotating parts of non-resonant plastics means desired quietness. Attractive, weatherproof; no costly plating or painting. If you can use molded parts, ask Reynolds for suggestions. "Molded Plastics" book sent free. REYNOLDS MOLDED PLASTICS, Division of Reynolds Spring Co., 1305 Reynolds Bldg., Jackson, Mich.



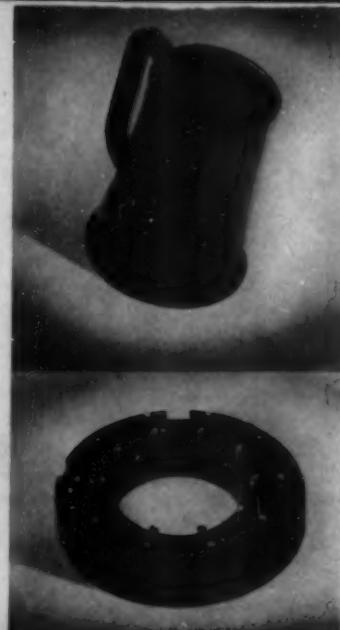
REYNOLDS Plastics

BAKELITE • BEETLE • DUREZ • PLASKON • RESINOX • TENITE

HOW MUCH IS A
"BETTER MOLDER"
WORTH TO YOU?

We can't say, without examining your present molding set-up. But we can say—and prove—that we have been worth REAL MONEY to many of our customers through advanced mold design, methods and materials. And, in many cases, we improved the finished product as well!

Molding technique is advancing so rapidly these days you need a molder who keeps up with every improvement, who passes on every saving to you. So this is a good name and address to remember:



AMERICAN INSULATOR CORP.
NEW FREEDOM PENN.

Complete line of
Machinery For Celluloid
And Plastics Mfrs.
JOHN J. CAVAGNARO
HARRISON Engineers and Machinists
ESTABLISHED 1881 NEW JERSEY
Special Representative
Evarts G. Loomis
126 So. 14th St. Newark, N. J.

Presses for Dehydrating, Filtering, Caking, Polishing, Stuffing, etc.



Cavagnaro-Loomis Vacuum Mixer
(Patented)

can be used with hot chemicals. Thus, a very important application has been the handling of boiling hydrochloric acid in relation to phenolic material.

Among the types of equipment which have been supplied may be listed cylindrical tanks from a few inches in diameter up to nine feet (Fig. 1), fractionating and scrubbing columns up to four feet in diameter by twenty feet tall (Fig. 3), rectangular tanks of practically any length by means of bolted-on sections (Fig. 2), dyeing machines, reactors, pipe and fittings (Fig. 4), fume duct, valves, cocks, pumps and fans, and numerous other items. Extremely complicated equipment has not proved either difficult or expensive to produce, by reason of the flexibility of the process. For the same reason, deviations from standard are not serious, and in fact, it is seldom that more than fifteen or twenty units of a particular design are supplied on a given order.

Up to the present the primary application of items made by this process has been in the field of corrosion resistant equipment. The field is not restricted, however, to such items; in fact, there are numerous cases where corrosion is no problem at all. Broadly speaking, this resin and the process, are applicable wherever large molded objects are required, or wherever quantities desired on intermediate sizes are very limited. For the quantity production of relatively small parts, however, the conventional molding processes are capable of much greater economy and Haveg does not enter this field at all.

Giftwares that sell

(Continued from page 14) become established in costume jewelry, automotive hardware, cutlery, lamps, wall panels, and what not. No expensive molds are required; they will take dyes of almost any color; and harden under atmospheric pressure. They can be formed in sheets or poured over other materials like wood. They are easily carved or manipulated; are non-heat conducting and shock resistant. Cast resin lends itself to striking yet dignified use, as is indicated by its architectural applications.



Copper incense burner with contrasting knob of ivory cast resin

One example of the general approach to the design problem may be found in the cast resin handles for a round tray to carry liquor and soda bottles, glasses,

ice bowls, and the like. The tray (1) is of polished chromium over solid copper. When it was first brought out, the handles were fashioned of metal in the shape of a pretzel, to capitalize on the then current popularity of beer. Today a simple bar of translucent blue cast resin held by two metal arms has replaced the pretzel design. The older type still sells to people who prefer beer to hard liquor, but the new tray can be used for a wider variety of purposes.

Men who enjoy mixing drinks like a tray which will hold enough cocktail or highball glasses. This one (2) which will hold an even dozen, is satin chromium plated over solid brass. It has just been put on the market. It is $20\frac{1}{2}$ inches long, 6 inches wide, and the weight is well distributed. The cast resin knobs on the handles help one to keep a firm grip on the tray, enhance the appearance of the metal, and add a subdued colorful note.

The magazine scroll (3) will accommodate up to fifty magazines of various sizes and hold them upright with its self-expanding scroll coils. The metal is polished chromium, with a handle of red or blue translucent cast resin.

An application of cast resin to a far less pretentious item, an incense burner, the white knob contrasting with the copper finish.

They also make a bow candlestick of satin chromium which is an interesting example of the superiority of cast resin over glass. Formerly, the company experienced difficulty in the adhesive used to bind metal and glass. When a base of transparent cast resin replaced the glass, it was possible to rivet or screw the metal to the plastic material and thus keep the joint absolutely rigid.

Laminated prevents scratching

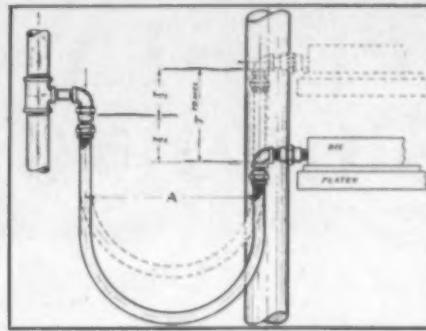
(Continued from page 34) washed at two separate stages and then allowed an average of one minute or better for passing through the draining section. When operated at maximum capacity a full minute of draining time is assured. When the speed of the machine is reduced the draining time proportionately increases. The operation of the machine is intermittent, making a single progression of one row of containers in every cycle. Each progression of a flight feeds and discharges a row of containers.

The containers are ejected from the cups onto the discharge carriage in a horizontal position. The carriage is revolved through an arc of 90 degrees, setting the containers upright in a vertical position on an even level with the discharge conveyor. The containers are then automatically moved on the discharge conveyor, the carriage returning to the horizontal position ready to receive the next row of containers to be discharged from the operation.

All main bearings are of the tapered roller type. All parts coming in contact with the washing water are of bronze construction, thereby eliminating any possible chance of corrosion or rust forming in the spray nozzles, pipes or manifolds.

Where warm water washing is advisable, the washer can be equipped with a thermostatically controlled Sylphon water heater, so that the desired temperature of washing water may be obtained by mixing steam with cold water, which is an effective method.

American Seamless Flexible Tubing



A Typical Installation

I.D. of Tubing	B	Min. A	Min. Overall Length
$\frac{3}{4}^{\prime\prime}$	10"	7"	$21^{\prime\prime} + \frac{1}{2}T$
$\frac{5}{8}^{\prime\prime}$	10"	10"	$26^{\prime\prime} + \frac{1}{2}T$
$\frac{1}{2}^{\prime\prime}$	12"	14"	$34^{\prime\prime} + \frac{1}{2}T$
$\frac{3}{8}^{\prime\prime}$	14"	19"	$44^{\prime\prime} + \frac{1}{2}T$
1"	16"	22"	$51^{\prime\prime} + \frac{1}{2}T$

In cut above is shown a typical installation, especially where steam is piped to the dies rather than to the platens. In table above you can figure the overall length of any assembly needed—T represents amount of travel and A the smallest diameter to which flexible tubing should be bent. Should larger bending diameter be used, apply the following formula: Overall length = B + 1.57A + $\frac{1}{2}T$.

Send for Free Illustrated Bulletin

The AMERICAN METAL HOSE BRANCH

The American Brass Company
Waterbury

Conn.

AN OLD TIMER WITH Young Ideas



AUBURN BUTTON WORKS, Inc.
AUBURN, N. Y.

Combine the brain of experience with the vitality of youth and you've got an unbeatable combination. That's why so many leading users of molded plastics rely on Auburn. There's sixty years of molding experience back of every job.

The size of our plant and the number of our workmen indicate how well our young ideas have kept us a jump ahead. No matter how complicated your design, or how precise your requirements, Auburn does it better.

Established 1876

PLASTIC MOLDING

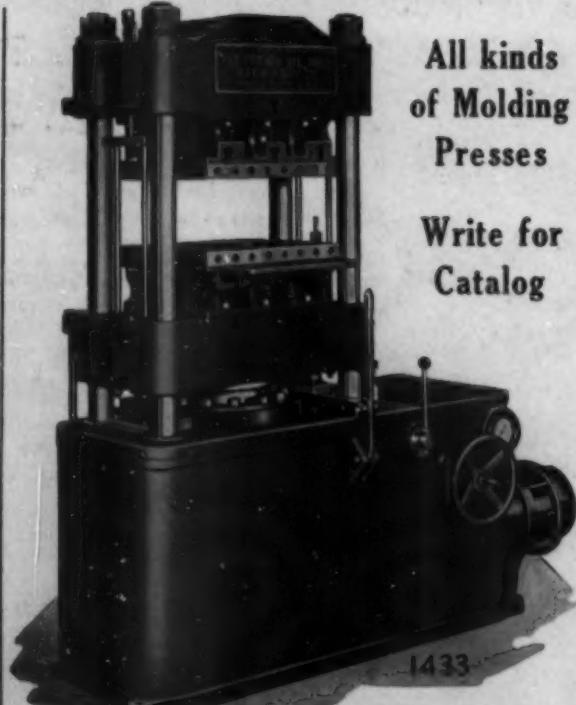
*

Producers of the
finest in molded parts
for over forty years



SHAW INSULATOR CO.
Irvington, N. J.

French Hydraulic Machinery



All kinds
of Molding
Presses

Write for
Catalog

Self-Contained Molding Press, Patent Pending
The French Oil Mill Machinery Co.
Piqua, Ohio

Architect's home wins award

(Continued from page 13) shelves, a bulkhead and cupboards so that at no time does it appear too spacious for comfortable living. There is ample room for guests to congregate in several groups for private discussion, yet there is no sense of vastness experienced when conversation takes a turn of general interest in which everybody joins.

Laminated plastics are used judiciously where drinks or cigarettes would be most likely to do damage through careless handling. The mantle, bulkhead and chess table are laminated phenolic and urea depending upon whether black or white was desired.



Built-in desk and book shelves directly opposite entrance to the Sanders' apartment. Roll screen at left provides privacy when required and Lumiline fixture overhead provides light

The dining table seats ten comfortably and is permanently placed or built-in. Its metal trestle supports a laminated urea top with disappearing ends which reduce its length when full capacity is not required. An oblong ground glass panel in the center is lighted from beneath and spreads its soft friendly glow to the flowers or other decorative center piece it supports.

The wide window ledge which also serves as a buffet with cupboards beneath is white laminated as is a serving shelf at the right of the pantry door where hot dishes or liquids may be dispensed without any damage occurring from spilling the foods.

A stairway from the living room leads to the master's room and guest room, each provided with a private bath. Two views of the master's room are shown to illustrate the practical use of laminated plastics to top the cabinet space and dressing nook at

one end and the mantle and bedside table top at the other end of the spacious room.

The guest room is at the rear and from the dividing hall a short stairway leads to the maid's apartment above, which with its tiled bath and air conditioning should make it comparatively easy to get a good maid and keep her happy.

The entire home is a model of efficiency and there is ample evidence of the ability of its designer-owner. It isn't merely its modern lines that make this house interesting and unique. Nor the intelligent use of plastics where their advantages are most obvious and practical. It is not alone the glass bricks of the facade, impressive as they are at first view. Nor the delightfully soft diffusion of sunlight they admit and distribute throughout the rooms. Nor is it the vari-colored walls of veneered rare woods and plaster that create its evident and ingratiating charm.

No—not any one of these—but a curiously perfect blending of them all into a something that floods one with a sense of surprised welcome and the perfect hospitality of the ideal hostess and host. Truly—an architect's dream come true.

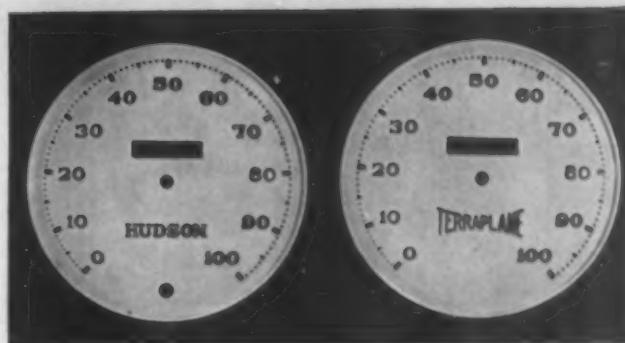
Plastics afloat

(Continued from page 21) gas stove. One stateroom, the galley, the crew's quarters and one lavatory, are all forward of the lounge. On the same deck but aft of the lounge, are the owner's stateroom, lavatory with shower, and, aft of these, a second guest stateroom with a double berth. The deck of the lounge is about three feet higher than the deck of the sleeping quarters, and under this deck are located the two Diesel engines of about 150 h.p. each, which constitute the propelling units. The deck over the after staterooms (which is about seventeen feet long and ten feet wide) is open above the rail, and has a white canvas awning and weather cloth lined with blue canvas to soften the glare of the sun. The forward end of this deck is enclosed with slanting glass sash, and at this location is the steering wheel, compass, etc. This deck serves as an open air lounge and has attractive furniture of reed and rattan with colorful upholstery. Table tops are laminated plastic.

The entire interior with the exception of the crew's quarters is finished with thin sheets of resin impregnated wood veneer and colored plastics. In the lavatories, phenolic with a polished surface trimmed in satin finish chromium moldings, is employed for the bulkheads, with a white ceiling of urea material. The effect is equal to that obtained with polished marble or glass, without the weight and possibly the expense of the latter. Plumbing fixtures finished in chromium give the space a very smart appearance. The shower curtain is in "silver" cloth to match.

The galley treatment is similar, except that the urea surfaces are white, and large quantities of stainless steel or chromium plated copper are used for working surfaces, shelving and refrigerator linings, giving the impression of unusual quality in the finish of the space, with a minimum of upkeep.

In the lounge, the bulkhead surfaces are plastic treated Prima Vera veneer (white mahogany) trimmed in black phenolic and chromium. A light wood was



TRANSLUCENT PLASTICS

These speedometer dials, produced for Stewart-Warner Corporation, illustrate both the beauty and practical value of translucent plastics. Their handsome appearance harmonizes completely with the modern motor car interior. Day or night, they can be read at a glance; yet when they are illuminated from behind, the light is so softly diffused that there is not the slightest glare in the eyes of the driver.

Stewart-Warner Corporation is still another of the nationally known manufacturers who have found here the engineering knowledge and production facilities to handle their most exacting molding jobs. May we suggest that you, too, will find it advantageous to consult us regarding your plastic molding problems?

CHICAGO MOLDED PRODUCTS CORPORATION

2146 Walnut St.

Chicago, Ill.

SINCE 1918

PLASTIC MOLDS

HAND
AUTOMATIC
SEMI-AUTOMATIC
and EXTRUSION
to the
LATEST METHODS

Designers and builders of all
types of PLASTIC MOLDS.

Serving most of the leading
molders in the country!

Our 1500-ton hydraulic Hob-
bing Press adds many ad-
vantages in obtaining lower
mold costs.

Estimates on request.



EAGLE TOOL & MACHINE CO.

37-39 Freeman St. Newark, N. J.

Phone: MARKET 3-1572
-1573



Your Time Is Money!

Don't waste it working with inferior tools!

Good art work demands good tools . . . **WEBER** Fine Artists' Colors . . . always the finest that money can buy.

Because **WEBER** Fine Artists' Colors are pure, brilliant, true . . . they are the choice of many successful artist-painters. And, because of these same important qualities, they are also the choice of leading package designers.

WEBER FINE ARTISTS' COLORS

Oil—Water—Tempera—Pastel

New 1936 Artists' Materials Catalog on request.

F. WEBER CO., 1220 Buttonwood Street, Philadelphia
ST. LOUIS BALTIMORE

Sold by dealers everywhere

Ameroid CASEIN PLASTICS

SHEETS and RODS

- Non-inflammable
- Made in beautifully mottled and plain colors

American Plastics
Corporation

50 Union Square

New York

selected to make the space appear as large as possible. Overhead there are several inches of sound-deadening wool between the carlins, covered with a flush ceiling of Prima Vera plastic veneer sheets perforated with fine holes to absorb the noise of the propelling engines. Black phenolic and chromium strips form ceiling panels over the seams of the perforated sheets. Furniture is walnut, trimmed in black and silver, made of walnut veneers, resin impregnated, for all exposed surfaces. A settee along one side which converts into a double bed has a built-in foundation of the same material. The built-in radio cabinet and surface of the buffet is laminated with no fear of scratching or marring in use. A small gas heater of black and chromium is fitted to a fireplace in chromium and gold at the after end of the lounge, and all electric fixtures are designed for indirect lighting.



b. Interior of Little Giant Richardson Cruiser showing door knobs, latches, and drawer pulls all molded of Durez.

A folding dining table has a laminated top with metal bead around the edge and cast aluminum base and legs. The spotless galley, complete with cupboards, refrigerator, two-burner gas stove with oven, has a white laminated surface with metal trim which is easy to keep clean and harmonizes delightfully with the stainless steel sink. The laminated ceiling and side walls are separated by metal moldings and the laminated sheet, which is actually only one thirty-second of an inch thick mounted on plywood, helps in a great measure to prevent rumbling. More important, however, it makes the galley practically fire-proof and is worth its weight in gold for this provision of safety alone.

Furniture, ceilings and walls in the cabins are laminated in natural wood grain fitting for such interiors. A light stand is at one end of the bunk and has a drawer and two shelves. This and the laminated bureau which has five drawers allows ample space for clothing. The modern lavatory and shower is done in black and ivory with laminated walls.

The interior of this "flagship" of the Wheeler fleet was designed by J. Philip Kiesecker, a prominent naval architect who has been specializing on ship interiors for many years and whose work is well known.

"These veneers," says Mr. Kiesecker, "were purchased in thin sheets as a commercial article and applied to ply-panels to obtain a finished surface of wear-resisting quality not affected by moisture, acids, alcohol, etc. The appearance of this material equals the highest grade finish employed in cabinet work without requiring the services of hardwood finishers and painters. The material has a rich permanent surface when purchased, equal to that of a French polish.

"The greatest advantage, however, lies in the fact that the plastic finish should endure for a long term of years, whereas any varnished or painted surface on a boat has considerable upkeep attached and calls for repainting and revarnishing every season or two. When this character of 'overhead' is undertaken by caretakers or owners the interest in economy usually prevents the interior appearance of the yacht being maintained at its original standard.

"The introduction of these new materials into small boat construction aroused great interest among the visitors at the show as evidenced by the constant line of people waiting to inspect the boat; especially among yachtsmen familiar with conditions of appearance and upkeep on small boats.

"As the material comes into more general use in boat work, each individual builder will perhaps develop his own technique in applying it, whether on the boat under construction or in the shop where it may be done more readily, and sent to the job as a finished bulkhead or surface. The protection of such finished surfaces after assembly would not be difficult and need be nothing more than a sheet of paper applied with water paste in the shop and readily removed by moistening when the boat is finished. This is feasible because the plastic surface, whether it be wood veneer or colored material, is impenetrable and any simple paste will readily wash off with no effect on the surface finish.

"Ordinary ply-panel wood bulkheads protected by plastic surfaces will certainly lessen the danger of fire on small boats, due to unusual causes. These surfaces would absolutely prevent the rapid spread of flames, giving the occupant more than a fair chance to meet an emergency. When an open flame is applied to one of these surfaces, a charring effect results, but combustion is not supported."

As evidence of the permanence of plastics afloat, a forty foot yawl owned by an executive of the company which supplied this lamination, has seen six years of surface. Its laminated galley and bath have required no repairs during this time and is still in its original lustrous condition when washed occasionally with soap and water.

Poking here and there among all sorts of boats at the show, we found few other places where plastics are used. Gar Wood uses plastic control knobs and frame on a built-in radio on one of his cruisers. The entire panel is only about three by four inches. The Colonial cruiser we saw has an instrument panel of mottled cast resin which looks well with the mahogany superstructure. It contains a light for night driving and has a horn button and ignition lock. A small but important spot in which to use a material that neither corrodes nor dents.

Accessories, of course, use plastics in many places where dependable insulation is imperative and we



CELLULOSE ACETATE
PHENOLIC PLASTICS
HARD RUBBER—PYROXYLIN—CATALIN CASEIN

Barrel polishing applies a lasting, high lustre, uniform finish at less cost for products made from all types of plastics.

We will finish a representative sample lot of your product **WITHOUT CHARGE**. Write for free booklet.

RUDOLPH R. SIEBERT
183 ST. PAUL ST. ROCHESTER, N. Y.
EQUIPMENT — METHODS — FORMULAE

DUPPLICATE DIES at Half the Cost



Multiple and single cavity plastic molds and glass molds, die-casting and small drop forging dies, etc., can be reproduced by Gorton Duplicators at half the cost of the ordinary methods—and with better accuracy. Mail the coupon for Duplicator bulletin.

GORTON

George Gorton
Machine Co.

Send me your bulletin on Die and Mold Duplicators.

Name

Company

Address

PLASTIC MOLDS

For seventeen years, leading molders have recognized this firm as the outstanding specialists in the manufacturing of molds for plastic materials, in die-sinking, engraving and hydraulic hobbing.

Our plant is Keller equipped for the most economical and speedy production of superior molds.

Place your problems in the hands of this experienced, well recognized and financially responsible concern.



**NEWARK DIE
COMPANY, Inc.**

24 SCOTT STREET, NEWARK, N. J.
TELEPHONE—MARKET 2-3772-73

CLASSIFIED

→ **HYDRO-PNEUMATIC ACCUMULATOR—**For Sale—One Watson-Stillman Accumulator, high and low pressure, complete with air compressor, air receiver, motor driven high pressure horiz. and low pressure vertical Pumps; also Hydraulic Presses, 27"x46" and 12"x12" platens. Reply Box 134, Modern Plastics.

→ **WANTED—PREFORM MACHINES—**Will pay cash for idle or surplus preform Presses—also Hydraulic Presses, Pebble Mills, Mixers, Sifters, etc. Send us your list. Consolidated Products Co., Inc., 13-14 Park Row, New York City.

→ **REPRESENTATIVE wanted in Detroit with** following in packaging field to represent long established manufacturer in collapsible tube and plastic bottle cap business; give references, particulars. Address Box 148, Modern Plastics.

→ **Connection for manufacturing (Clinocid)** sanitary pocket carrier for thermometers, made of plastics—or patent for sale. Write for information to Abraham Warshawsky, 706 Ashford Street, Brooklyn, New York.

→ **WANTED—a good energetic and experienced moulder to be in charge of moulding department of moulding plant as foreman. Good opportunity and chance for advancement for the right party. Reply Royal Moulding Company, 69 Gordon Avenue, Providence, R. I.**



7. Interior cabin of William Hand Jr. Motor Sailer widely used for fishing and cruising. Handles, knobs, electrical fixtures and vacuum jug are of molded Durez.

saw some interesting spark plug shields called "Rajah Hoods" which prevent rain and spray from shortening the life of the plugs.

Someday, we suppose, boat buyers will have heard about plastics and will demand molded hardware that will not corrode. They will insist upon laminated interiors which will not peel off and chip. They will make sure that the interior finish of all their cabins are sufficiently fire resistant to be reasonably safe. They will want to be positive that the hull is protected by paint and spar with a resin base. They will not be satisfied with a few knobs, buttons, and latches sparingly used. Until then, boat builders will probably continue to use brass and chromium and wood where plastics might be better. Perhaps it is because they are not aware of the advantages of these new materials. Perhaps it is because the public is not ready to accept them. In the meantime, the Richardsons and Wheelers are going ahead building better boats for safer cruising. They are the pioneers on whose shoulders rests the burden of proof.

Laboratory press for research

(Continued from page 29) permanent dental plates. Resins of this type have been on the market now for approximately three years indicating that development work, accomplished in its early stages on a laboratory press, in this instance also was successfully completed.

The Columbia Dental & X-Ray Corporation has developed in its laboratory an effective method of preparing "technique" teeth for demonstration purposes. Teeth of all sizes and shapes, from molars to cuspids, are made from plastic material and attached to a plastic base, a most convenient form for handling by students for practice and study and also by dentists in explaining to patients types and kinds of fillings they find necessary in each case. Naturally plastic teeth are not used in actual dental plates but the material is entirely satisfactory for study and demonstration and can be made inexpensively on a simple laboratory press without much additional equipment.

The Trubenizing Process Company, through exhaustive investigation learned that shirt collars that would hold their shape and require no starching when laundered might be produced by simply impregnating the material with cellulose acetate. All the preliminary work was done in their own laboratories on a small press illustrated on page 29.

This interest in plastic materials for research and development work by nationally known industrial concerns, noted research laboratories such as Mellon Institute, and Government Bureaus was suggested through a cursory examination of concerns owning and operating small laboratory presses equipped for molding small quantities of plastic materials. A more detailed investigation proved that these firms, far removed from the plastic industry, actually use a considerable quantity of plastics in their laboratories.

The laboratory press, which really represents a miniature molding plant, enables users to set up young laboratory plants in their shops. It is a hydraulic, hand operated press entirely self contained with hand pump and oil storage for ram incorporated in it. Although small, it is very powerful and good for any load up to ten tons. With standardized apparatus, it is 36 inches high and 15½ inches wide from front to back and light enough for a man to lift and place on a bench or table all ready to go to work. For plastic molding the press is furnished with electric hot plates 6 inches square, complete with wiring and switch to operate from a lamp socket, regularly furnished for 110 volts, but they may be had for 220 volts if desired. They provide for any heat up to 400 degrees F. and are fitted with thermometer pockets in the sides by which temperatures can be accurately checked, the plates being insulated from the platens by asbestos. When required, the press can be furnished with hot plates fitted for heating by steam and chilling by water. Each steam plate is supplied with two flexible metal hose connections for connecting to steam and water piping. Practically any type of molding materials can be used but the press has a size limit of about three and one-half inches in diameter which is plenty large enough for ordinary experimental purposes. This compact press is especially convenient for mounting metallographic specimens. During preliminary development work on vinyl resins and ureas, where neither the exact pressure nor molding temperature required were known, it proved invaluable.

These laboratory presses are used extensively by large molding companies within the plastic industry, too, for tests and control work probably because they enable users to produce samples and acquire necessary data regarding temperatures, required pressures, molding time, etc., before investing large sums of money in expensive dies and equipment. But the use of these presses by concerns other than those regularly engaged in the plastic industry is particularly interesting, since it signifies widespread interest in the possibilities of plastic materials in research and development work in all branches of industry. Since these laboratory presses are not costly, require little space and are simple to handle, such work can be done easily and inexpensively in small laboratories as well as larger ones and undoubtedly they helped in no small measure to facilitate important research work already accomplished by such concerns.



Check Cavity Temperatures

It is the only way to be assured of uniform molding temperature with resulting uniformity of color, shape and texture of product. This is why Powder Manufacturers specify definite molding temperatures with every formula. The Cambridge Pyrometer is an accurate, convenient and rugged instrument to use for this purpose.



Cambridge Instrument Co., Inc.
3732 Grand Central Terminal
New York City
Pioneer Manufacturers of Precision Instruments
CAMBRIDGE
Mold Surface Needle
PYROMETERS

*Send for details of these instruments. They save
you money and make better plastics possible.*

Northern
INDUSTRIAL CHEMICAL CO.
10 ELKINS ST., So. BOSTON, MASS.

HIT THE
BULL'S EYE

when in need
of PLASTIC
MOULDINGS

with
25 YEARS EXPERIENCE

BAKELITE
DUREZ
BEETLE
PLASKON
UNYSTE
TENITE

MOST UNIVERSAL EQUIPMENT—TIME HONORED SERVICE
COMPETENT ENGINEERING

INDEX OF ADVERTISERS

American-British Chemical Supplies, Inc.	46
American Catalin Corp.	1
American Insulator Corp.	56
American Metal Hose Branch, American Brass Co.	57
American Plastics Corp.	60
Associated Attleboro Manufacturers, Inc.	53
Auburn Button Works, Inc.	57
Bakelite Corp.	Inside Back Cover
Barco Manufacturing Co.	51
Beetleware Corp.	10
Boonton Molding Co.	9
Cambridge Instrument Co., Inc.	63
Carver, Fred S.	6
Cavagnaro, John J.	56
Celluloid Corp.	7
Chicago Molded Products Corp.	59
Claremont Waste Mfg. Co.	54
Colonial KOLONITE Co.	37
Colton Co., Arthur	46
Consolidated Molded Products Corp.	47
Diemolding Corporation	52
Eagle Tool & Machine Co.	59
Elmes Engineering Works, Charles F.	53
Fiberloid Corporation, The....	4
French Oil Mill Machinery Co., The....	58
General Electric Co.	Back Cover
General Plastics, Inc.	Inside Front Cover
Gorton Machine Co., George....	61
Heyden Chemical Corp., The....	49
Illinois Testing Laboratories, Inc.	52
Index Machinery Corp.	41
Industrial Plastics Co.	37
Ivorycraft Company, Inc.	37
King Mfg. Co., J. M.	37
Krest Manufacturing Company....	37
Kreul Co., H.	37
Kuehne Chemical Co.	50
Kurz-Kasch Co., The....	55
Makalot Corporation....	44
Marblette Corp., The....	2
Monsanto Chemical Co.	44
National Aniline & Chemical Co., Inc.	48
Newark Die Co., Inc.	62
Northern Industrial Chemical Co.	63
Plaskon Co., Inc.	30-31
Plastic Turning Co.	37
Resinox Corp.	8
Reynolds Spring Company....	55
Richardson Co., The....	45
Rogers Mfg. Co.	37
Shaw Insulator Co.	58
Shoreham Mfg. Co.	37
Siebert, Rudolph R.	61
Standard Tool Co.	50
Stokes Machine Co., F. J.	5
Stokes Rubber Co., Jos.	49
Synthetic Molded Products, Inc.	54
Tech-Art Plastics Co.	43
Tennessee Eastman Corp.	35
Turner, Douglas....	37
Weber Co., F.	60

While every precaution is taken to insure accuracy, we cannot guarantee against the possibility of an occasional change or omission in the preparation of this index.



MODERN PLASTICS

BRESKIN & CHARLTON PUBLISHING CORP.

425 FOURTH AVENUE, NEW YORK CITY